




PANAMA CANAL COMMISSION

ANNUAL REPORT

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FISCAL YEAR ENDED SEPTEMBER 30, 1983



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PANAMA CANAL COMMISSION

Balboa, Republic of Panama
OFFICE OF THE ADMINISTRATOR

FROM THE ADMINISTRATOR

It is a pleasure to submit the fourth annual report of the Panama Canal Commission covering Canal operations for fiscal year 1983.

Fiscal year 1983 marked another successful year for the Panama Canal in terms of fulfilling its mission to provide safe, efficient transit service to international shipping. Noteworthy among the Commission's accomplishments were the acceleration of key maintenance projects, technological improvements to locks overhaul programs, the initiation of a second generation marine traffic control system designed to improve the surveillance and control of vessel traffic, and the implementation of a transit booking system allowing vessels to reserve a slot in the transit schedule. Additionally, a series of cost reduction measures, aimed at keeping operating costs down and minimizing the requirement for future toll rate increases, were implemented.

The actions represent significant achievements during a year in which worldwide recession in the maritime industry and the diversion of the Alaska North Slope oil trade to a trans-Panama pipeline resulted in a decline in vessel traffic and Canal operating revenues. Through effective austerity measures and the efforts of our dedicated and well-trained work force, operating expenditures were controlled without adverse impact on the waterway and the Canal continued to serve world commerce well, while covering all costs from its revenues.

The Canal improvement programs are producing results as evidenced by the virtual elimination of ship delays and the lowering of Canal Waters Time to about 20 hours on average, compared to the 33 hours registered in fiscal year 1982. This reduction in the time vessels spend in Canal waters

was achieved even while transits by the largest vessels the Canal can accommodate—those of 100-foot beam and over—reached a record setting 20% of total oceangoing transits. Improved Canal service is also reflected in our safety record which showed a marked reduction in vessel accidents.

The accomplishments during the past year attest to the extraordinary contributions made by the men and women who work to keep the waterway operating efficiently. To retain these strengths in the challenging years ahead, training programs have been developed or expanded with emphasis on increased participation by qualified Panamanians. Panamanians now constitute over 75% of our work force and much of the increase has been in senior and supervisory positions. A number of collective bargaining agreements also were concluded during the year, establishing a positive and constructive relationship between the Commission and its employees.

Many challenges remain. Canal traffic levels have not yet returned to a pattern of sustained growth; however, we are confident that the Canal's future will be bright. Traffic levels are expected to turn upward in the years ahead and major projects important for the long term viability of the waterway will continue to be accomplished. The Panama Canal Commission remains fully committed to serving world trade with the standards of excellence that have been the tradition of the Panama Canal.



D. P. McAULIFFE,
Administrator

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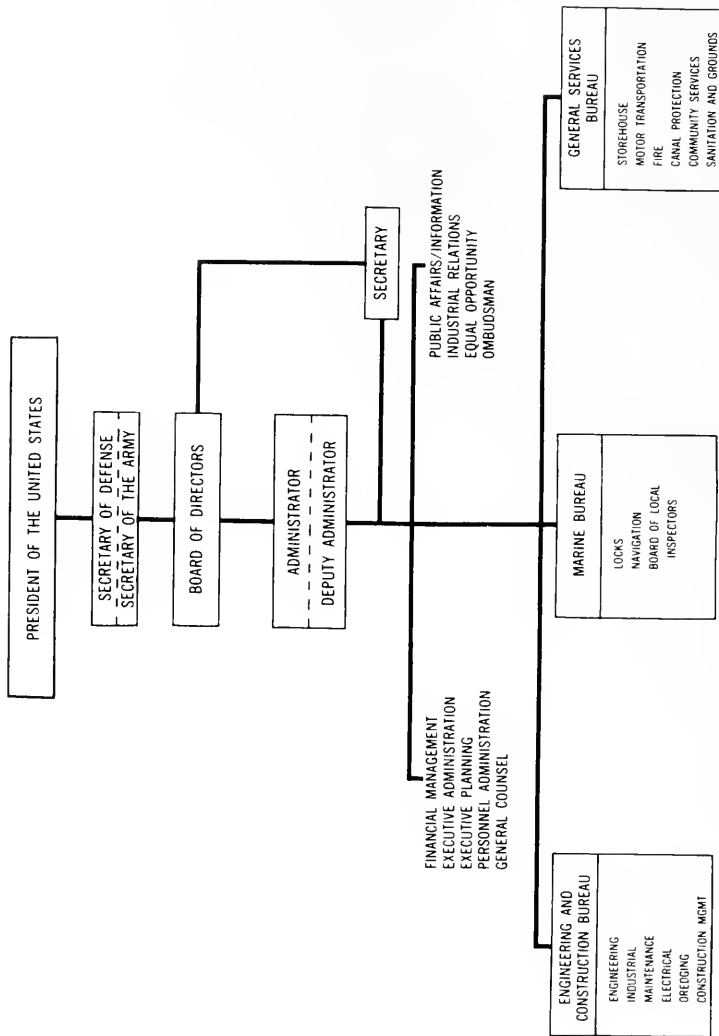
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PANAMA CANAL COMMISSION



August 1983

INTRODUCTION

ORGANIZATION

The Panama Canal Commission is an agency of the Executive Branch of the United States Government, provided for by the Panama Canal Treaty of 1977, and established by the Panama Canal Act of 1979 (93 Stat. 452; 22 U.S.C. 3601 et seq.), enacted September 27, 1979. The authority of the President of the United States with respect to the Commission is exercised through the Secretary of Defense and the Secretary of the Army. The Commission is supervised by a nine-member Board. Five members are nationals of the United States and four are Panamanians. Board members who are U.S. nationals are appointed by the President with the advice and consent of the Senate.

The Commission was established to carry out the responsibilities of the United States with respect to the Panama Canal under the Panama Canal Treaty of 1977. In fulfilling these obligations, the Commission manages, operates, and maintains the Canal, its complementary works, installations, and equipment, and provides for the orderly transit of vessels through the Canal. The Commission will perform these functions until the Treaty terminates on December 31, 1999, when the Republic of Panama will assume full responsibility for the Canal.

The Commission is expected to recover, through tolls and other revenues, all costs of operating and maintaining the Canal, including interest, depreciation, capital for plant replacement, expansion and improvements, and payments to the Republic of Panama for public services and annuities, in accordance with paragraph 5 of Article III and paragraphs 4(a) and (b) of Article XIII, respectively, of the Panama Canal Treaty of 1977. Revenues from tolls and all other sources are deposited in the U.S. Treasury in an account known as the Panama Canal Commission Fund. Appropriations for operating expenses and capital improvements are enacted annually by the Congress and are limited to the sum of the estimated receipts for the year, plus any unexpended balances in the Panama Canal Commission Fund.

THE CANAL

The Panama Canal is a lock-type canal approximately 51 miles long from deep water to deep water. The minimum width of the navigable channel is 500 feet. Navigable channel depth varies according to the amount of water available in Canal storage areas. The normal range of permissible transit draft is from 38 feet to 39 feet 6 inches tropical fresh water.

Vessels transiting the Canal are raised in three steps to the level of Gatun Lake, the principal source of Canal water, then lowered to sea level again in three steps. The three sets of Canal locks are paired so as to permit simultaneous lockage of two vessels in the same direction or in opposite directions.

Since August 15, 1914, the official date of its opening, the Panama Canal has served world trade virtually without interruption. Through this fiscal year, a total of 625,510 vessels of all types have transited with 523,339 or 83.7 percent of the total being of the oceangoing commercial class.

TOLLS RATES

Panama Canal tolls rates were increased approximately 9.8 percent on March 12, 1983. Toll rates are: (a) On merchant vessels, Army and Navy transports, tankers, hospital ships, supply ships, and yachts, when carrying passengers or cargo: \$1.83 per net vessel ton of 100 cubic feet of actual earning capacity. Such tonnage is determined in accordance with the "Rules of Measurement of Vessels for the Panama Canal;" (b) on such vessels in ballast, without passengers or cargo: \$1.46 per net vessel ton; and (c) on other floating craft: \$1.02 per ton of displacement.

By treaty, the United States continues to provide to Colombia free transit through the Canal of its troops, materials of war, and ships of war.

BOARD OF DIRECTORS
Beginning Fiscal Year 1983

- Honorable WILLIAM R. GIANELLI,
Chairman
Assistant Secretary of the Army
(Civil Works)
Washington, D.C.

Honorable JOHN A. BUSHNELL
Deputy Chief of Mission
U.S. Embassy
Buenos Aires, Argentina

Honorable PHILLIP DEAN BUTCHER B.
(Member-designate)
Vice President, Inter-American
Regional Organization of Workers (ORIT)
Panama, Republic of Panama

Honorable EDWIN FABREGA V.
Director General
Institute of Hydraulic Resources and
Electrification (IRHE)
Panama, Republic of Panama
- Honorable ANDREW E. GIBSON
President, Delta Steamship
Lines, Inc.
Short Hills, New Jersey

Honorable TOMAS PAREDES R.
Executive Director
Executive Bureau for Panama
Canal Treaty Affairs
Panama, Republic of Panama

Honorable RICARDO A. RODRIGUEZ
Panama, Republic of Panama

Honorable WILLIAM SIDELL
Poway, California

Honorable WILLIAM W. WATKIN, Jr.
Beaufort, South Carolina

Executive Committee

Honorable WILLIAM R. GIANELLI, *Chairman*

Other members to be determined.

OFFICIALS IN THE REPUBLIC OF PANAMA

Administrator Honorable D. P. McAULIFFE
Deputy Administrator Honorable FERNANDO MANFREDO, Jr.

OFFICIALS IN WASHINGTON, D.C.

Secretary MICHAEL RHODE, Jr.

BOARD OF DIRECTORS

Ending Fiscal Year 1983

Honorable WILLIAM R. GIANELLI,
Chairman
Assistant Secretary of the Army
(Civil Works)
Washington, D.C.

Honorable LUIS A. ANDERSON
Vice Minister of Labor and
Social Welfare
Panama, Republic of Panama

Honorable JOHN A. BUSHNELL
Deputy Chief of Mission
U.S. Embassy
Buenos Aires, Argentina

Honorable FERNANDO CARDOZE
Panama, Republic of Panama

Honorable ANDREW E. GIBSON
Short Hills, New Jersey

Honorable OYDEN ORTEGA
Minister of Foreign Relations
Panama, Republic of Panama

Honorable CARLOS OZORES
Ambassador to the United Nations
Panama, Republic of Panama

Honorable WILLIAM SIDELL
Poway, California

Honorable WILLIAM W. WATKIN, Jr.
Beaufort, South Carolina

Executive Committee

Honorable WILLIAM R. GIANELLI,
Chairman
Honorable FERNANDO CARDOZE
Honorable OYDEN ORTEGA
Honorable WILLIAM SIDELL
Honorable WILLIAM W. WATKIN, Jr.

Cut Widening Feasibility Committee

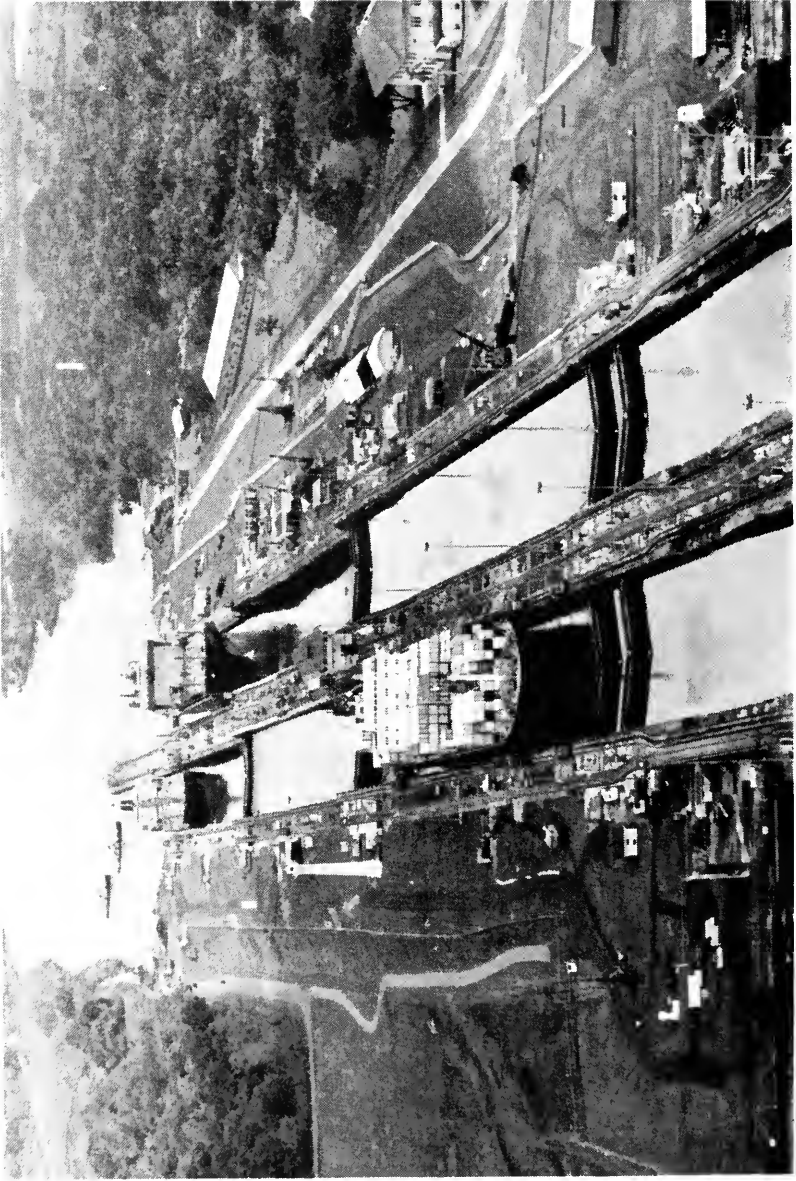
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Administrator Honorable D. P. McAULIFFE
Deputy Administrator Honorable FERNANDO MANFREDO, Jr.

OFFICIALS IN WASHINGTON, D.C.

Secretary MICHAEL RHODE, Jr.



LARGE SOUTHBOUND VESSELS AT GATUN LOCKS
—in the west lane a container ship and bulk cargo ship—in the east lane an unladen roll-on/roll-off vessel.

Chapter I

CANAL TRAFFIC

TRAFFIC

Canal traffic and tolls revenue declined substantially during fiscal year 1983 as a result of the loss of the Alaska North Slope (ANS) oil trade to the trans-Panama pipeline system and the worldwide shipping recession. The oil pipeline started operations early in October 1982.

Total oceangoing transits in fiscal year 1983 dropped 16.2 percent to 11,846 or 32.5 vessels daily from 14,142 or 38.7 daily during the prior year. Vessels owned or operated by the U.S. Government and free Colombian and small Panamanian Government vessels (e.g., health or police) made 139 transits during the year compared to 133 transits in fiscal year 1982.

Despite the loss of the large ANS tankers, the trend toward larger vessels was evident in the percentage of vessels having beams of 100 feet and over. Transits by vessels in that category, which totaled 2,371, accounted for 20.0 percent of total oceangoing transits compared to 2,681 or 19.0 percent in 1982. Transits by vessels having beams of 80 feet and over accounted for 5,869 or 49.5 percent of total oceangoing transits compared to 7,226 or 51.1 percent of total oceangoing transits in the prior year. In terms of Panama Canal net tonnage, the average size of oceangoing commercial transits remained about the same. Oceangoing commercial vessels averaged 14,485 Panama Canal net tons compared to 14,488 tons in 1982.

Total Panama Canal net tonnage declined to 170.7 million tons in fiscal year 1983 from 204.0 million tons in the prior year. Correspondingly, tolls revenue also declined, despite the toll rate increase of 9.8 percent put into effect on March 12, 1983. Total tolls revenue reached \$287.8 million (\$14.1 million of which was due to the toll rate increase) compared to \$325.6 million during fiscal year 1982. Oceangoing commercial tolls accounted for \$286.1 million of total tolls in 1983 and U.S. Government tolls accounted for \$1.7 million. Other transit-related revenues, such as tug, launch, harbor pilotage, and other services, reached \$55.4 million for a total transit revenue of \$343.2 million compared to \$385.1 million in the prior fiscal year.

A two-year summary of the principal elements of Canal traffic and tolls revenue is shown in the following table:

COMPARATIVE HIGHLIGHTS OF OPERATIONS

	<i>Fiscal year</i>	
	<i>1983</i>	<i>1982</i>
Oceangoing transits:		
Commercial	11,707	14,009
U.S. Government	125	110
Free	14	23
Total	<u>11,846</u>	<u>14,142</u>
Daily average	32.5	38.7
Small transits:		
Commercial	810	830
U.S. Government	242	241
Free	56	58
Total	<u>1,108</u>	<u>1,129</u>
Total cargo:		
Commercial	145,591,428	185,453,260
U.S. Government	354,878	285,451
Free	2,512	70
Total	<u>145,948,818</u>	<u>185,738,781</u>
Total Panama Canal net tons and reconstructed displacement tonnage	170,655,341	203,999,771
Transit revenue:		
Commercial tolls	\$286,057,692	\$324,031,594
U.S. Government tolls	<u>1,733,331</u>	<u>1,557,503</u>
Tolls revenue	<u>\$287,791,023</u>	<u>\$325,589,097</u>
Harbor pilotage, tug, launch, and other services	<u>55,381,005</u>	<u>59,466,095</u>
Total transit revenue	<u>\$343,172,028</u>	<u>\$385,055,192</u>

COMMODITIES AND TRADE ROUTES

Twelve key commodity groups have maintained relatively stable levels of importance to Canal traffic in recent years. The groups, shown on the chart on page 11, accounted for 88.4 percent of total oceangoing commercial cargo, near the proportion observed for these commodity groups in 1982 when they registered 90.3 percent.

The most significant development in Canal traffic during fiscal year 1983 was the loss of the Alaska North Slope (ANS) oil trade. Shipments during the year dropped to an average of 86 thousand barrels daily from 636 thousand barrels per day in 1982. This volume of trade generated 199 transits and \$6.5 million in tolls revenue compared to 1,551 transits and \$50.8 million in tolls revenue during fiscal year 1982.

As a result of the loss of the ANS oil trade, grain, although declining slightly to 36.5 million long tons from 37.6 million long tons in 1982, regained its position as the major commodity group shipped through the

waterway. Grain shipments accounted for 25.0 percent of total oceangoing commercial cargo in 1983. The strength of this commodity group was primarily due to an increase in corn shipments, which reached a record 21.6 million long tons, rising 59.5 percent from 13.6 million long tons in 1982. This increase offset nearly all of the drop sustained in wheat shipments which declined 60.3 percent to 5.6 million long tons from 14.0 million long tons the prior year. The downturn in the wheat movement was due to a decrease in U.S. wheat purchases by China. With the exception of soybeans, which increased by 8.9 percent to 7.0 million long tons from 6.5 million tons the prior year, the remaining products in the group showed declines, dropping 37.4 percent to 2.2 million long tons from 3.6 million long tons in 1982. Grain shipments from the United States to Asia constituted 84.4 percent of the total movement of this commodity group, with Japan, Mainland China, and South Korea being the principal destinations.

Petroleum and petroleum products, the second major commodity group shipped through the Canal, dropped by 42.5 percent from 59.0 million long tons in 1982 to 33.9 million long tons, reflecting the loss of the ANS oil trade. Crude oil movements totaled 18.7 million long tons, representing 55 percent of the total commodity group. Twenty-four percent, or 4.4 million long tons, of the crude shipments originated from the Alaska North Slope.

Shipments of coal and coke decreased 52.4 percent during fiscal year 1983 to 10.7 million long tons, accounting for 7.4 percent of all cargo shipments. A major factor in the sharp drop in coal shipments through the Canal was the slump in the Japanese steel industry which led to a reduction of metallurgical coal imports by the Japanese. Coal to Japan accounted for 7.0 million long tons or 65.5 percent of the trade, and shipments to Taiwan totaled 1.4 million long tons or 12.6 percent of the coal and coke commodity group. Coal shipments may have also been affected by a relative increase in bypass movements around the Cape of Good Hope. The proportion of U.S. East Coast shipments to the Far East taking the Cape route compared to the Canal route increased from 24.0 percent the prior year to 40.0 percent.

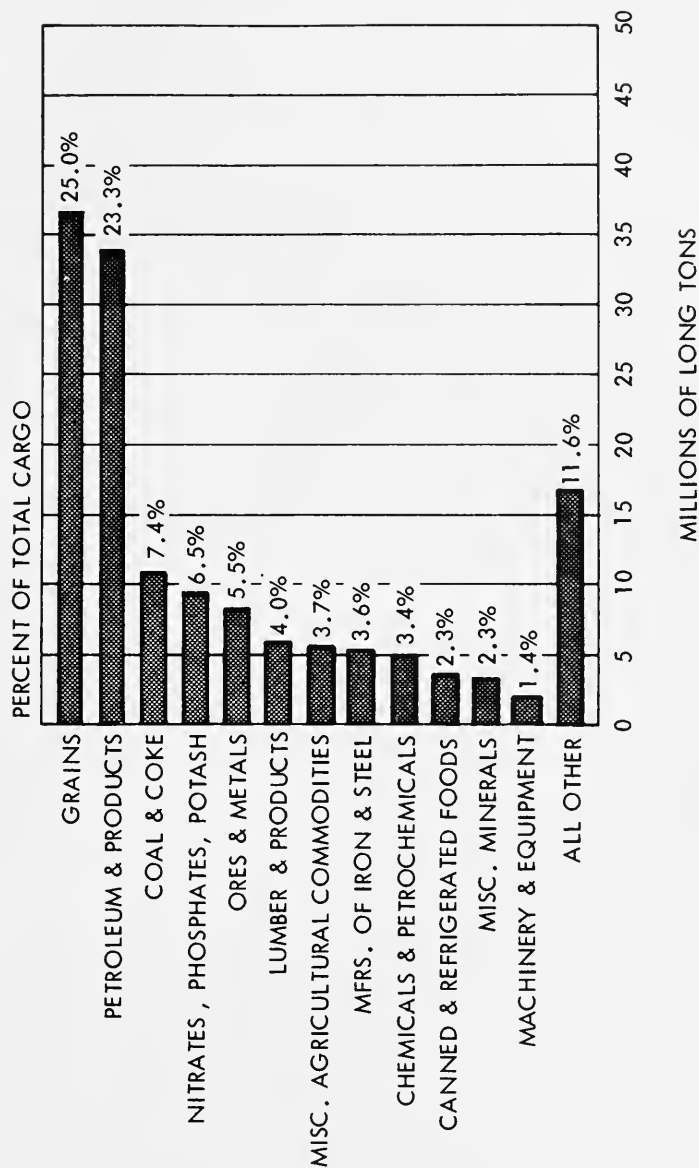
Among those commodity groups registering increases were nitrates, phosphates, and potash, which rose by 11.4 percent to 9.4 million long tons; ores and metals, which increased by 1.6 percent to 8.0 million long tons; lumber and products, which were up by 11.8 percent to 5.9 million long tons; and chemicals and petrochemicals, which rose 1.9 percent to 5.0 million long tons.

Other Canal commodities showing declines included manufactures of iron and steel, which were down by 26.6 percent to 5.2 million long tons; miscellaneous agricultural commodities, which dropped by 1.0 percent to 5.4 million long tons; canned and refrigerated foods, which decreased by 11.2 percent to 3.4 million long tons; miscellaneous minerals, which declined 18.8 percent to 3.3 million long tons; and machinery and equipment, which dropped 11.2 percent to 2.0 million long tons.

Commodity shipments continued to show concentration to specific areas and countries of the world. Trade between East Coast United States and Asia continued to dominate Canal traffic with 41.4 percent of total Canal cargo moving over this route in fiscal year 1983. This proportion is higher than the 38.7 percent observed in 1982. Cargo movements on this trade route, however, dropped 16.0 percent to 60.3 million long tons in 1983 from 71.8 million long tons in 1982.

The following chart and table show the principal commodity groups moving in commercial vessels in 1983 and a comparison of the major trade routes in fiscal years 1983 and 1982.

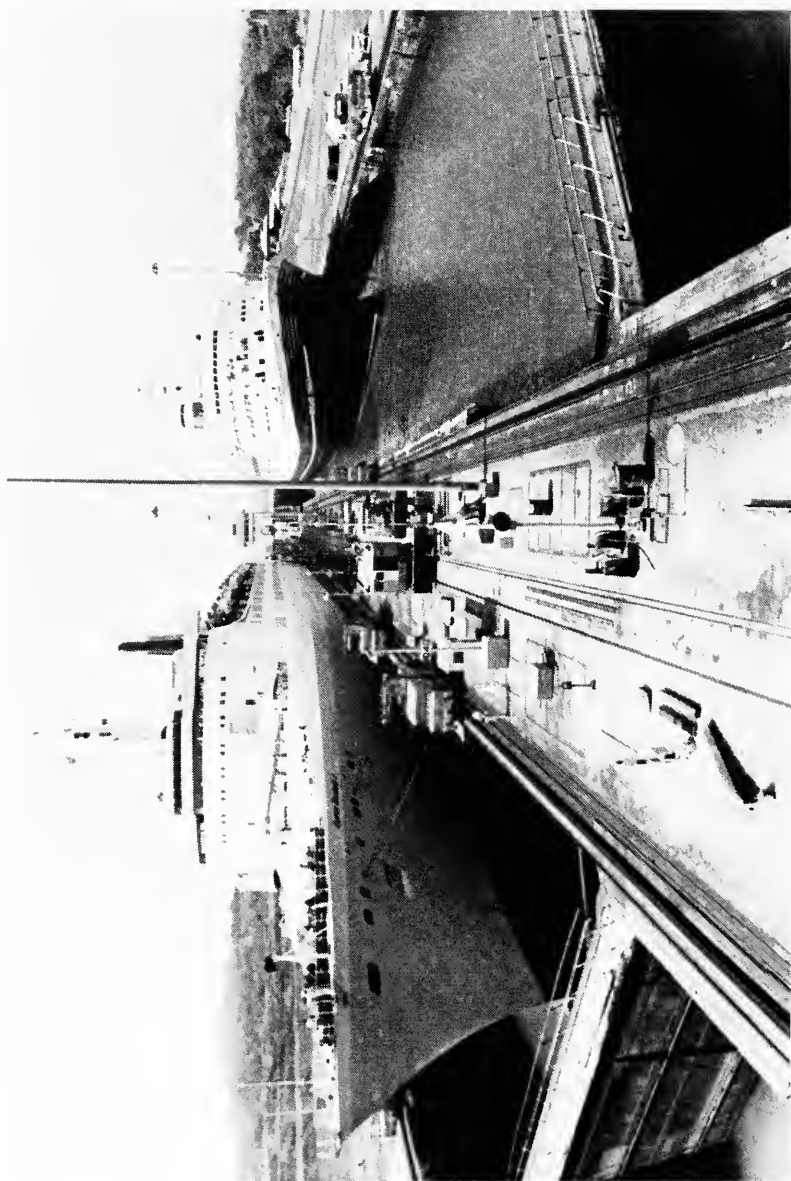
PRINCIPAL COMMODITY GROUPS
TRANSITING THE CANAL
OCEANGOING COMMERCIAL CARGO FY 1983



Major Trade Routes in Canal Traffic

Trade Route	Fiscal year [In thousands of tons]								Percent increase or (decrease)
	1983				1982				
	Panama Canal Net Tons	Long Tons Cargo	Panama Canal Net Tons	Long Tons Cargo	Panama Canal Net Tons	Long Tons Cargo	Panama Canal Net Tons	Long Tons Cargo	
East Coast United States—Asia	66,467	60,322	71,682	71,789	71,682	71,789	(7.3)	(16.0)	
East Coast United States—West Coast South America	17,401	12,866	15,506	11,701	15,506	11,701	12.1	10.0	
Europe—West Coast United States/Canada	13,345	12,425	13,585	13,876	13,585	13,876	(1.8)	(10.5)	
East Coast United States—West Coast Central America ¹	8,336	7,518	32,731	31,532	32,731	31,532	(74.5)	(76.2)	
Europe—West Coast South America	8,014	5,247	9,482	6,020	9,482	6,020	(15.5)	(12.8)	
U.S. Intercoastal (including Alaska and Hawaii)	5,633	4,764	6,650	6,000	6,650	6,000	(15.3)	(20.6)	
East Coast Canada—Asia	5,510	4,239	4,337	3,235	4,337	3,235	27.1	31.0	
East Coast United States/Canada—Oceania	4,472	3,824	5,053	4,312	5,053	4,312	(11.5)	(11.3)	
West Indies—West Coast South America	3,613	3,178	3,190	2,546	3,190	2,546	13.3	24.8	
Central American Intercoastal	3,590	3,260	2,271	2,313	2,271	2,313	58.1	40.9	
South American Intercoastal	3,328	3,590	3,246	3,336	3,246	3,336	2.5	7.6	
Europe—Oceania	3,252	2,086	3,475	2,396	3,475	2,396	(6.4)	(12.9)	
Subtotal	142,961	123,319	171,208	159,056	171,208	159,056	(16.5)	(22.5)	
All other routes	26,543	22,272	31,676	26,396	31,676	26,396	(16.2)	(15.6)	
Total	169,504	145,591	202,884	185,452	202,884	185,452	(16.5)	(21.5)	

¹ In Canal trade route statistics, North Slope oil originating in Alaska is shown as transshipped cargo from Puerto Armuelles, Panama, if the vessel's voyage originated there.



THE "QUEEN ELIZABETH 2" current record holder for tolls assessed, is shown during a fiscal year 1983 lockage alongside the much smaller Russian passenger vessel ALEXANDER PUSHKIN.

Chapter II

CANAL OPERATIONS

Canal operations are comprised of Transit Operations and Maintenance and Other Canal Projects. The various functions are divided among a number of operating bureaus within the Canal agency.

TRANSIT OPERATIONS

Daily average transits by oceangoing vessels decreased from the 38.7 per day during fiscal year 1982 to 32.5 per day during fiscal year 1983. Average time in Canal waters decreased from 33.0 hours in fiscal year 1982 to 20.1 hours in fiscal year 1983.

<i>Fiscal year</i>	<i>Vessels of 600-foot length and over</i>	<i>Percent of total oceangoing transits</i>	<i>Vessels of 80-foot beam and over</i>	<i>Percent of total oceangoing transits</i>
1983	4,157	35.1	5,869	49.5
1982	5,534	39.1	7,226	51.1
1981	4,855	34.7	6,364	45.5
1980	4,598	33.8	6,089	44.7
1979	4,089	31.3	5,503	42.1

The number of vessels transiting at more than 36-foot drafts decreased 31.9 percent during FY 1983 with 1,715 vessels transiting the Canal compared to 2,517 last year. The maximum allowable draft varied between 36 feet and 39 feet 6 inches during the six-month period of February-August of this fiscal year.

Total jobs performed by Commission tugs decreased from 45,687 in fiscal year 1982 to 35,454 in fiscal year 1983.

	<i>Fiscal year</i>	
	<i>1983</i>	<i>1982</i>
Oceangoing transits	11,846	14,142
Tug jobs:		
Balboa	24,044	30,879
Cristobal	11,410	14,808
Tug operating hours	57,249	71,126



THE DIPPER DREDGE "CHRISTENSEN"—busy at work on the channel deepening project in Gaillard Cut.

MAINTENANCE AND RELATED CANAL PROJECTS

Canal dredging activity was intensified this year in Gaillard Cut. The Mamei Curve widening project, which was initiated in fiscal year 1977 and which required the removal of approximately 2.7 million cubic yards of material, was completed. When completed in early 1985, the channel deepening project will lower the channel an additional three feet below current levels, thus providing additional water necessary to meet requirements during dry years while ensuring, with a high degree of certainty, a year-round maximum draft of 39.5 feet.

During the \$4.0 million overhaul at Miraflores Locks, this fiscal year, miter gates 116, 117, 118, and 119 were overhauled. Commission employees renewed miter and quoin bearing plates, pintle and jaw bushings, bottom seals, strut arms, and anchor castings, and accomplished miscellaneous repairs to walkways, and cathodic protection systems. Five towing locomotives were overhauled this year. Ten are planned for next year. The 240- to 480-voltage conversion project continues. Conversions at Miraflores and Pedro Miguel Locks have been completed, and the Gatun conversion is in progress. With the completion of the High Mast Lighting project at Pedro Miguel Locks this year, pilots can handle wide-beamed vessels for a few more hours per day at all locks. Repair of locks locomotive tow track systems continued during fiscal year 1983.

A \$3.7 million contract was awarded to a private contractor for construction of a Tug/Miter Gate Repair Facility at the Commission's Industrial Division at Mount Hope. The contract was for assembly and the Civil Works part of a \$6 million project which consists of constructing a marine lifting table with a net effective lifting capacity of 750 tons, hoisting equipment, two finger piers, and a 400-foot-long work area; and of providing appurtenant specialized equipment. The 72-foot by 160-foot lifting table is suspended from the finger piers by ten electrically operated hoists. This installation will replace the Industrial División's old and undersized Marine Railway No. 2, and will permit work to be done on vessels "in the dry" without occupying the limited capacity of the drydock. After completion, all Commission floating equipment, except the Dredge *Christensen*, Floating Crane *Hercules*, and the two floating caissons will be maintained at Mount Hope with considerable personnel support cost savings.

Progress continued on construction of the vessel tie-up station one mile north of Pedro Miguel Locks. However, due to contractor-labor problems, the project is approximately one year behind the original schedule.

The southeast and southwest lower wing wall knuckles at Miraflores Locks had 100-inch pneumatic tire fenders installed on vertical shafts. Because of extreme tidal range, a set of three tires with vertical spacing was used. Work is in progress to install similar fenders on the upper wing walls at Gatun where a set of two tires is used. The fenders turn and recede upon

impact, the vertical shaft ends slide on phenolic surfaces. Reduction of ship and lock-wall damage is the purpose of this improvement. In fiscal year 1983, \$1,284,859 was spent on knuckle fender installation.

Following two-step formal advertising procedures, a \$1.1 million contract was awarded to a contractor to replace the electric power system's obsolete Supervisory Control and Data Acquisition (SCADA) system with a modern computerized system. The new system will monitor 332 telemetry points as well as the status of 904 electrical devices and alarms. It will control 580 devices, including generators, circuit breakers, and transformer under load tap-changers at 20 remote terminal sites. This \$1.5 million project is scheduled for completion in fiscal year 1985. The new system will provide the power system dispatcher with improved emergency reaction capability, as well as with real-time information for more efficient operation of the entire electric power generating and transmission system.

The Mount Hope gas turbine was overhauled to improve its reliability to generate peaking power as needed, and the third hydroelectric generator at the Madden Dam Power Plant was rewound and uprated to increase its capacity from 8,000 KW to 12,000 KW. Completion of this project at Madden Plant uprates the capacity of the entire station from 24,000 KW to 36,000 KW of hydroelectric power, thereby reducing total power generating costs and increasing base generating capacity during years when rainfall permits.

Flood control, severe weather monitoring, and reservoir management capabilities were enhanced with the installation of an S-Band Radar, part of a contract to install an improved weather surveillance system. The radar was installed in May 1983 and has been operational since early June. With the radar in its present operational status, the Meteorological and Hydrographic Branch has altered its flood control procedures to operationally accept an increase of $1\frac{1}{2}$ -foot in Gatun Lake level without endangering the locks. The impact of the higher lake levels will result in decreasing the potential of draft restrictions during dry season and, possibly, in allowing more hydroelectric power generation at Gatun Dam.

By early 1983, severe drought conditions required the Commission to restrict vessel draft, and to curtail the production of hydroelectric power. Panama's Institute of Hydraulic Resources and Electrification (IRHE) also felt the impact of the drought and had to impose brown-outs in many areas of the Republic. In an effort to mitigate the drought condition, the Commission, with participation by IRHE, entered into an interagency agreement with the U.S. Bureau of Reclamation for emergency cloud seeding for a 90-day period. Although the effects of the cloud seeding were not scientifically quantifiable, the project did contribute positively toward increasing the allowable ships' draft from $38\frac{1}{2}$ feet to 39 feet about three weeks sooner, and a return to the normal maximum draft of $39\frac{1}{2}$ feet about 10 days sooner than if the Commission had not undertaken the project.

Commission Marine Traffic Controllers are being provided with a closed circuit television (CCTV) system in order to improve their vessel surveillance along the critical sections of the Canal. Ten of eighteen cameras have been installed and ten of thirteen towers have been erected at selected sites along the Canal. At the Marine Traffic Control Center, six of eight large video monitors have been installed. This project is scheduled for completion in mid-1984.



IMPROVED FIRE PROTECTION

—a new fire truck with extended reach and capacity will significantly improve firefighting capabilities at the locks.

Chapter III

SUPPORTING OPERATIONS

Supporting operations of the Panama Canal Commission provided essential support services to the operation and maintenance of the waterway and the agency's facilities, as well as to other U.S. agencies on the Isthmus and to employees and their dependents. These operations included logistical services, employee services, sanitation and grounds management, transportation facilities, public utilities, fire protection, Canal protection, health and safety, and library services.

LOGISTICAL SERVICES

The Storehouse Division provided centralized procurement, inventory management, warehousing, distribution, contract administration, supply and property disposal support to Canal operations. Major contracting activities included approximately \$27.8 million in Bunker "C" fuel purchases for thermoelectric generation, \$6.5 million for light diesel, purchase of the fourth *Alianza* Class towboat for \$2.1 million, \$1.5 million purchase of a split hull dump scow for dredging operations, \$1.6 million for renewal of hydro-turbine runners, \$1.1 million electrical power system Supervisory Control and Data Acquisition (SCADA) System, and a \$760,000 marine lifting table for the Tug/Miter Gate Repair Facility at Mount Hope.

The Storehouse Division's excess disposal activities included transfers to other U.S. Government agencies of equipment having an original acquisition value of approximately \$828,000, while property sold to the Government of Panama at fair market value amounted to approximately \$54,863.

The Commission continues to participate under the Military Sealift Command's contract out of the gulf port of New Orleans, LA. Approximately 14,500 measurement tons of containerized and breakbulk cargo were shipped to the Port of Balboa under the contract.

COMMUNITY SERVICES

During fiscal year 1983, the Commission managed housing, other Commission-owned buildings, and recreational facilities for the agency, its employees and their dependents. The housing livability program, which permits limited improvements with rental payback to housing retained for use by Commission employees, was continued, as were programs for enhancing quarters security, quarters energy conservation and preventive maintenance.

The Commission initiated a multiyear housing management plan to concentrate its housing requirements in selected housing areas. Implementation of the plan will enable the Commission to utilize housing and related maintenance resources in the most cost-effective manner while at the same time allow the Commission to preserve optimum housing accommodations for its eligible employees and to meet its responsibilities in accordance with the Panama Canal Treaty and related agreements.

SANITATION AND GROUNDS MANAGEMENT

Fiscal year 1983 was an unusual year in regard to the Commission's responsibility to control vectors of disease. The *Aedes aegypti* mosquito, a dangerous carrier of both yellow fever and dengue fever, which was last found in the Canal area in 1974, returned to reinfest housing areas near the shipping piers. Intensive control measures, coordinated with Government of Panama vector control officials, promptly eradicated this infestation.

After 25 years of moving northward through the South American continent following an accidental release in Brazil, Africanized honeybees reached the Panama Canal in March 1982. Thus, fiscal year 1983 was the second year of efforts to control this aggressive insect for protection of employees and local residents from risk of serious stinging incidents. Over 500 African bee swarms and nests were destroyed during the year in the interest of public health, as well as to prevent the bees from being accidentally transported by Canal shipping to uninfested world ports.

In the grounds care and vegetation control activity, a significant portion of the utility line maintenance workload was accomplished by contract forces for the first time in several years. A study of other grounds care program elements was begun to determine if the remaining workload could successfully be accomplished by contract.

Approximately 70,000 tons of refuse was received for disposal at the two sanitary landfill sites operated by the Commission. Efforts to solve a problem of trespassers and concomitant health hazards were continued.

TRANSPORTATION FACILITIES

The Motor Transportation Division operated and maintained a consolidated motor pool of 836 vehicles designed to meet the vehicular transportation requirements of the Commission. The vehicle fleet in fiscal year 1983 included 636 trucks of various types, 186 passenger-carrying vehicles, and 14 special-purpose vehicles. Vehicle mileage decreased slightly from 7,961,000 miles in fiscal year 1982 to 7,501,000 miles in fiscal year 1983. Fully equipped shops, including a tire retreading plant and heavy duty repair shops, provide facilities for overhauls, maintenance and repairs to the Motor Transportation Division fleet and equipment of other Commission units. In addition, some services were contracted out where they were available in required quantity and quality in Panama. The vehicle inspection facilities located within the Motor Transportation Division areas were used by the Government of Panama to conduct inspections of privately-owned vehicles and by the Motor Transportation Division to perform Commission vehicle inspections.

PUBLIC UTILITIES AND ENERGY

Panama Canal Commission facilities include electric power generation and distribution systems, communication systems, water purification and distribution systems, and a central chilled water air-conditioning system for certain public buildings on the Pacific side.

Total Canal area energy demand during fiscal year 1983 was 567 gigawatt hours, a 1.6 percent increase from the 558 gigawatt hours used last year. The peak hourly demand of 91 megawatts reached on April 4, 1983, was 2.2 percent above the peak of 89 megawatts in the prior year. Agency-wide energy consumption in fiscal year 1983 for electrical power and fuel, calculated together in Btu's, was reduced a total of 25.6 percent in relation to the fiscal year 1975 baseline established by the Federal Energy Management Program. Electrical power consumption by the Commission, 70.9 gigawatt hours, was 4.7 percent below the usage levels recorded for comparable operations in fiscal year 1975; fuel consumption excluding fuel for power generation, 4.4 million gallons, was 42.6 percent below the corresponding fiscal year 1975 baselines.

The water treatment and distribution systems operated by the Commission provide potable water for the Canal area and areas of the Republic of Panama. The Pacific side system serves the Canal area, Panama City, and suburban areas; and the separate Atlantic side system serves the Canal area, the city of Colon, and suburban areas. During fiscal year 1983, the two systems supplied 3,190 million cubic feet of potable water to consumers, an increase of about 3.8 percent over the previous year.

Water Consumption by Areas
(Millions of cubic feet)

	<i>Fiscal year</i>	
	<i>1983</i>	<i>1982</i>
Canal Area	792	722
Panama City and suburbs.....	1,655	1,612
Colon and suburbs	743	740
Total	3,190	3,074

The water provided to Panama City and suburbs in fiscal year 1983 was 2.7 percent above fiscal year 1982 consumption and averaged 33.9 million gallons per day throughout fiscal year 1983.

FIRE PROTECTION

The Panama Canal Commission Fire Division, in coordination with the Panama Fire Corps, is responsible for fire protection, firefighting, and rescue operations in Canal operating areas, defense sites, civilian and military areas of coordination, and shipboard firefighting on all vessels in Canal Area waters.

During fiscal year 1983, there were 971 fires (excluding ships), causing a loss of \$233,262 as compared to 726 fires in fiscal year 1982 which resulted in a loss of \$390,455. There were 14 ship fires during this fiscal year versus 11 in the previous fiscal year. Ship fire losses in fiscal year 1983 were \$17,670 as compared to \$2,813,155 the year before.

CANAL PROTECTION

The Canal Protection Division provides a minimum essential level of physical security for important installations and facilities of the Panama Canal Commission through the prevention and detection of theft, pilferage, and sabotage; and the prevention of unauthorized use of Government property, equipment and facilities. Division personnel are also responsible for the Commission physical environmental protection function. During fiscal year 1983, security system improvements (personnel, equipment, and procedures) were planned for Commission installations. Training of security personnel, a continuous function, was intensified.

HEALTH AND SAFETY

During fiscal year 1983, the Panama Canal Commission's health and safety organization underwent significant changes as a means of achieving greater operating efficiency and cost effectiveness. In December 1982, the Office of Health and Safety was eliminated and the Occupational Health, Safety and Veterinary Divisions were transferred to the Office of Personnel Administration. Concurrently, the Personnel Director was appointed as the Designated Agency Safety and Health Official. The Personnel Director also assumed responsibility for overseeing and establishing policy for the agency's environmental sanitation program. The

Veterinary Division was disestablished at the end of December and responsibility for food-inspection services was transferred to the Sanitation and Grounds Management Division of the General Services Bureau, while responsibility for zoonotic disease control and related inspections of transiting vessels was assumed by the Government of Panama.

In its expanded role, the Office of Personnel Administration is responsible for the agency's occupational health, industrial hygiene, and safety programs. The office maintains close liaison with the U.S. Army Medical Department Activity (MEDDAC), Panama on all matters pertaining to the health care provided to Commission employees, their dependents and others sponsored by the agency. The office also maintains liaison with components of the Department of Defense, other elements of the U.S. Government, and appropriate officials and organizations of the Government of Panama relative to health matters.

Work-place safety, employee safety training, and accident prevention continued to receive management emphasis at all levels in the organization. During fiscal year 1983, the Commission experienced 761 performance of duty accidents in which the injured employee required medical attention beyond first aid, as compared to 817 such accidents in fiscal year 1982. There were no fatal accidents in fiscal year 1983 compared to four the previous fiscal year.

LIBRARY SERVICES

The Library Services Branch of Community Services Division is responsible for providing mission-support information and research to the Panama Canal Commission, maintaining a special collection of library and three-dimensional materials relating to the history of the Panama Canal, and providing limited general library service to Commission employees and their dependents, U.S. Forces and their dependents, and to the extent possible, other Isthmian residents.

The circulation index decreased from 1,942.9 in fiscal year 1982 to 1,016.6 in fiscal year 1983. The reference index decreased from 9.4 in fiscal year 1982 to 8.6 in fiscal year 1983. Total items in the library decreased from 246,700 to 239,900.

Chapter IV

ADMINISTRATION AND STAFF

PERSONNEL FORCE EMPLOYED AND RATES OF PAY

At the end of fiscal year 1983, the total Isthmian force of the Commission was 8,344 compared to 8,363 employees in fiscal year 1982. Of the total in 1983, 7,745 were full-time permanent and 599 were part-time and temporary. In addition, there was one military officer assigned to the Commission on the Isthmus. Thirteen persons, all U.S. citizens, were employed by the Commission in New Orleans and Washington, D.C.

Approximately 77 percent of the total Isthmian force was comprised of Panamanians; 3 percent of third country nationals; and the remaining 20 percent of U.S. citizens. Rates of pay were based on a Canal Area Wage Base for occupational categories normally filled by recruitment on the Isthmus prior to the treaty effective date of October 1, 1979, and on a U.S. Wage Base for positions normally filled by recruitment from the United States prior to that date. The New Wage System for employees hired locally, on or after October 1, 1979, was revised April 3, 1983, increasing the rates for non-manual grade 9 and manual grades 10 and above to U.S. Wage Base rates. On that same date, the Critical Skills Wage Base for employees hired into critical skill occupations after October 1, 1979 was eliminated. The following table shows the Commission civilian permanent full-time Isthmian work force by citizenship and wage base.

<i>Fiscal Year 1983</i>	<i>U.S.</i>	<i>Non-U.S.</i>	<i>Total</i>
Canal Area Wage Base	98	3,258	3,356
U.S. Wage Base	1,435	1,915	3,350
New Wage Base	65	974	1,039
Total	<u>1,598</u>	<u>6,147</u>	<u>7,745</u>

The total Commission payroll was \$170.4 million in fiscal year 1983 compared to \$176.7 million in fiscal year 1982. Of the total Commission fiscal year 1983 payroll, \$101.8 million was paid to non-U.S.-citizen employees and \$68.6 million to U.S.-citizen employees.

EQUAL EMPLOYMENT OPPORTUNITY PROGRAM

Between fiscal years 1982 and 1983, the total number of EEO complaints filed remained essentially unchanged. A minor increase in the number of U.S. complaints and a minor decrease in the number of Non-U.S. complaints were noted as follows:

	Fiscal year	
	1983	1982
United States.....	4	3
Non-United States	10	12
Total.....	14	15

Generally, employees alleged disparate treatment in appointment and promotion actions.

On September 16, 1983, the Assistant Secretary of Army for Civil Works approved a collective bargaining agreement between the Commission and the Maritime/Metal Trades Council (AFL-CIO). This agreement covers employees in the nonprofessional bargaining unit (approximately 7,400 employees). The agreement permits members of the bargaining unit to raise allegations of discrimination through the grievance procedure in the agreement. For non-U.S. citizens, the formal administrative appeal procedure is replaced by an abbreviated investigative procedure intended to mesh with the time limits established in the negotiated grievance procedure. For U.S. citizens in the unit, the statutory appeals procedure is an option in lieu of the negotiated grievance procedure. U.S.- and non-U.S.-citizen employees not covered by negotiated agreements and applicants for employment may continue to file EEO complaints under the statutory procedure or the Agency's administrative procedure, respectively.

Between fiscal year's 1982 and 1983, there were negligible variations in the Isthmian permanent work force composition on the basis of sex as follows:

	Fiscal year 1983		Fiscal year 1982	
Female	791	(10.1%)	785	(10.1%)
Male	7,051	(89.9%)	6,955	(89.9%)

The continued trend in the increasing number of Panamanians in the work force was noted as follows:

	Fiscal year 1983		Fiscal year 1982	
United States	1,646	(21.0%)	1,705	(22.0%)
Panama.....	5,966	(76.0%)	5,876	(75.0%)
Third Country Nationals	230	(3.0%)	254	(3.0%)

Employment statistics for the fiscal year 1983 reflected continued compliance by the Commission with Treaty mandates.

PUBLIC AFFAIRS

During fiscal year 1983, the Office of Public Affairs continued to expand and improve agency communications with the local and international media. Strong emphasis was placed on creating close relations with local news media (press, television, radio, and publications) and in participating in exhibits, symposiums, and seminars in the Republic of Panama and abroad. The Office of Public Affairs also continued to expand its contacts with the world maritime industry and dedicated considerable effort towards increasing Panama Canal Commission participation in international conferences and shipping exhibitions. Two new presentations were created this year and put into use in internationally-based forums in London, England and Rio de Janeiro, Brazil. Both emphasized the Canal's efforts to provide its customers with safe, efficient transit service, while at the same time striving to maintain and improve the waterway to ensure its maximum operational effectiveness.

During the year, the office handled 288,435 visitors at Miraflores and Gatun Locks and conducted 809 tours of the locks facilities. Among the visitors were numerous representatives of the international press, and representatives of television and the motion picture industry involved in making documentaries about the Canal.

OMBUDSMAN

The Office of the Ombudsman, established by the Implementing Legislation for the Panama Canal Treaty of 1977, continued to respond to employee and dependent complaints, grievances, and requests for information. Generally, complaints required the Ombudsman to investigate administrative problems, inefficiencies, omissions, and policy conflicts caused within the Panama Canal Commission and other U.S. Government agencies on the Isthmus as a result of the treaty. However, the widest latitude possible was applied to consideration of problems affecting employee morale and quality of life.

During fiscal year 1983, over 3,043 requests for information and/or assistance were recorded by the Ombudsman. As in the previous year, the majority of the Ombudsman's work concerned Commission employees and those employees who were transferred with their functions from the Panama Canal Company/ Canal Zone Government to the Department of Defense.

INDUSTRIAL RELATIONS

On October 20, 1981, the Federal Labor Relations Authority (FLRA), Region VI, certified the unions which had won the self-determination election held earlier in the year. The unions certified by the FLRA to represent Commission bargaining units were as follows: the Maritime/Metal Trades Council, AFL-CIO (a union coalition consisting of the National Maritime Union of America, the International Organization of Masters, Mates and

Pilots, and the Metal Trades Council) representing both a professional and non-professional bargaining unit; the Marine Engineers Beneficial Association, District No. 1—Pacific Coast District representing a licensed marine engineer unit; and the International Association of Fire Fighters, Local 13, representing a firefighting unit. These four bargaining units, together with the Panama Canal pilot unit, which is represented by the International Organization of Masters, Mates and Pilots, comprise the total organized labor structure of the Panama Canal Commission pursuant to Federal Service Labor-Management Relations Statute, 5 U.S.C. Chapter 71. Based upon May 1983 data (including temporary employees), approximately 95 percent of the work force were represented by labor unions.

Bargaining commenced on the non-professional contract on January 21, 1982 and culminated in an agreement which became effective on September 16, 1983. Negotiations on the licensed marine engineer contract, which began on April 6, 1982, produced an agreement which became effective on October 6, 1982. Bargaining on the firefighter contract started on September 20, 1982; that agreement became effective on April 7, 1983. Negotiations on the professional unit contract commenced on March 9, 1982, but were suspended on May 12, 1983 due to the filing of a decertification petition by a member of the bargaining unit. A new labor organization, the National Federation of Professional Employees (Panama), intervened, and the Federal Labor Relations Authority is scheduled to conduct an election early in fiscal year 1984.

Chapter V

FINANCIAL REPORT

FINANCIAL STATEMENTS

FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1983

The Panama Canal Commission is an appropriated fund agency of the Executive Branch of the United States Government provided for by the Panama Canal Treaty of 1977, and established by the Panama Canal Act of 1979 (Public Law No. 96-70). The Commission is expected to recover, through tolls and other revenues, all costs of operating and maintaining the Canal, including interest, depreciation, capital for plant replacement, expansion and improvements, and payments to the Republic of Panama for public services and annuities pursuant to paragraph 5 of Article III and paragraphs 4(a) and (b) of Article XIII, respectively, of the Panama Canal Treaty of 1977. Revenues from tolls and all other sources are deposited in the United States Treasury in an account known as the Panama Canal Commission Fund. Appropriations for operating expenses and capital improvements are enacted annually by the Congress and are limited to the sum of the estimated receipts for the year, plus any unexpended balances in the Panama Canal Commission Fund. The Commission's accounts are kept on an accrual basis of accounting in accordance with generally accepted accounting principles, while the status of appropriated funds is determined on a funded (obligation-incurred) basis.

The financial statements of the Panama Canal Commission, appearing as Tables 1 through 6, with accompanying notes, present the financial position of the Commission at September 30, 1983, and the results of its operations for the fiscal year then ended.

The accounts and statements of the Panama Canal Commission have been examined by the General Auditor of the Commission and are subject to examination by the United States General Accounting Office. Detailed audit reports of the United States General Accounting Office are directed to the Congress and are presented as Congressional documents.

Summary information concerning operating results and capital expenditures follows:

RESULTS OF OPERATIONS

Net loss from operations amounted to \$4.1 million. This amount will be recovered from subsequent revenues as required by section 1602(b) of the Panama Canal Act of 1979 (Public Law No. 96-70).

CAPITAL EXPENDITURES

Accrued capital expenditures for fiscal year 1983 amounted to \$21.7 million. The principal expenditures were \$3.3 million for replacement of dump scows, \$2.3 million for navigational improvements, \$1.4 million for replacement of launches and launch engines, \$1.3 million for improvements of the wingwall knuckle fendering systems, \$1.3 million for construction of a ship tie-up station, and \$0.9 million for marine railway replacement project.

Table 1.—Balance Sheet

Assets	1983	1982
PROPERTY, PLANT AND EQUIPMENT:		
At cost (Note 1c).....	\$869,818,221	\$853,314,309
Less accumulated depreciation and valuation allowances (Notes 1e, 2 and 3)	<u>402,676,579</u>	<u>386,676,308</u>
	<u>467,141,642</u>	<u>466,638,001</u>
CURRENT ASSETS:		
Cash and fund balances (Notes 4 and 5):		
Deposit funds and undeposited receipts:		
Postal fund	158,657	167,723
Trust fund	1,132,860	1,015,983
Cash receipts for deposit into U.S. Treasury	<u>282,793</u>	<u>576,536</u>
	<u>1,574,310</u>	<u>1,760,242</u>
Unexpended appropriated funds:		
Operating funds	45,222,217	74,440,013
Capital funds	28,517,883	21,424,115
Emergency fund	<u>10,000,000</u>	<u>10,000,000</u>
	<u>83,740,100</u>	<u>105,864,128</u>
	<u>85,314,410</u>	<u>107,624,370</u>
Accounts receivable, less allowance for doubtful accounts of \$50,612, for fiscal year 1982 (Note 1f)	11,043,545	9,987,875
Other receivables (Note 7)	<u>826,867</u>	<u>826,867</u>
	<u>11,870,412</u>	<u>10,814,742</u>
Inventories, less allowance for obsolete and excess stock of \$750,154 and \$800,000, respectively (Note 1g)...	<u>42,010,283</u>	<u>34,580,616</u>
Other current assets	<u>354,383</u>	<u>203,737</u>
	<u>139,549,488</u>	<u>153,223,465</u>
OTHER ASSETS:		
Deferred charges:		
Cost of early retirement benefits (Note 1h)	312,960,000	332,520,000
Retirement benefits to certain former employees of predecessor agencies (Note 1h)	10,776,000	11,940,000
Other	<u>612,319</u>	<u>816,426</u>
	<u>324,348,319</u>	<u>345,276,426</u>
Unrecovered costs due from subsequent revenues (Notes 1b and 8)	<u>4,132,804</u>	<u>.....</u>
	<u>328,481,123</u>	<u>345,276,426</u>
TOTAL ASSETS	<u>\$935,172,253</u>	<u>\$965,137,892</u>

September 30, 1983 and 1982

Liabilities	1983	1982
INVESTMENT OF THE UNITED STATES GOVERNMENT:		
Invested capital:		
Interest-bearing (9.885% and 9.178%, respectively) (Note 9)	\$108,905,590	\$89,763,345
Non-interest-bearing	<u>268,748,245</u>	<u>258,511,310</u>
	<u>377,653,835</u>	<u>348,274,655</u>
Current budgetary accounts (Note 4):		
Obligated operating funds	45,222,217	74,440,013
Obligated capital funds	18,031,685	15,705,670
Unobligated capital funds	10,486,198	5,718,445
Unobligated emergency fund	<u>10,000,000</u>	<u>10,000,000</u>
	<u>83,740,100</u>	<u>105,864,128</u>
	<u>461,393,935</u>	<u>454,138,783</u>
CURRENT LIABILITIES:		
Accounts payable:		
U.S. Government agencies (Note 10)	3,914,323	22,808,314
Government of Panama	6,205,923	7,090,498
Other	<u>4,708,282</u>	<u>6,197,843</u>
	<u>14,828,528</u>	<u>36,096,655</u>
Accrued liabilities:		
Employees' leave	38,075,806	36,427,154
Salaries and wages	6,124,362	5,624,977
Cost of early retirement benefits (Note 1h)	19,560,000	19,560,000
Retirement benefits to certain former employees of predecessor agencies (Note 1h)	1,364,000	1,483,000
Employees' repatriation	1,457,000	1,743,000
Ship accident claims (Notes 7 and 11)	9,818,560	11,032,030
Net revenue payable to Government of Panama (Note 12) .....	.....	378,635
Other	<u>2,432,361</u>	<u>2,027,612</u>
	<u>78,832,089</u>	<u>78,276,408</u>
Other current liabilities:		
Unfunded ship accident claims (Notes 7 and 11) ..	17,890,038	20,553,489
Advances for capital-unexpended (Notes 1d and 13)	13,231,035	11,379,967
Other	<u>1,114,088</u>	<u>916,418</u>
	<u>32,235,161</u>	<u>32,849,874</u>
	<u>125,895,778</u>	<u>147,222,937</u>
DEFERRED CREDIT:		
Advances for capital being amortized (Notes 1d, 6d and 13)	<u>14,437,009</u>	<u>11,956,238</u>
LONG-TERM LIABILITIES AND RESERVES:		
Cost of early retirement benefits (Note 1h)	293,400,000	312,960,000
Retirement benefits to certain former employees of predecessor agencies (Note 1h)	9,412,000	10,457,000
Employees' repatriation	10,200,000	10,998,000
Lock overhauls (Note 1i)	7,607,574	8,294,198
Casualty losses (Notes 1j and 14)	<u>12,825,957</u>	<u>9,110,736</u>
	<u>333,445,531</u>	<u>351,819,934</u>
TOTAL LIABILITIES	<u>\$935,172,253</u>	<u>\$965,137,892</u>

The accompanying notes are an integral part of this statement.

**Table 2.—Statement of Operations and Non-Interest-Bearing Investment
Fiscal Years Ended September 30, 1983 and 1982**

	1983	1982
OPERATING REVENUES:		
Tolls (Note 1b).....	\$287,791,023	\$325,589,097
Advances for capital (Note 1d)	<u>(4,078,000)</u>	<u>(681,000)</u>
Net tolls revenue	<u>283,713,023</u>	<u>324,908,097</u>
Other	111,417,549	112,946,382
Advances for capital (Note 13)	<u>(1,173,549)</u>	<u>(5,870,015)</u>
Net other revenue	<u>110,244,000</u>	<u>107,076,367</u>
Total operating revenue	<u>393,957,023</u>	<u>431,984,464</u>
OPERATING EXPENSES:		
Payments to the Government of Panama (Note 12):		
Public services	10,000,000	10,000,000
Fixed annuity	10,000,000	10,000,000
Tonnage	<u>51,190,136</u>	<u>61,193,887</u>
	71,190,136	81,193,887
Maintenance of channels and harbors	35,970,930	45,203,812
Navigation service and control	72,452,357	79,067,472
Locks operation	45,641,090	45,998,340
General repair, storehouse, engineering and maintenance services	9,625,198	11,305,378
Transportation and utilities	42,104,531	36,403,300
Housing operations	8,871,031	8,136,555
General and administrative (Note 15)	69,126,899	72,226,412
Interest on interest-bearing investment (Note 9)	9,943,192	9,123,826
Other	<u>33,164,463</u>	<u>42,029,589</u>
Total operating expenses	<u>398,089,827</u>	<u>430,688,571</u>
NET OPERATING REVENUE (LOSS) (Notes 1b, 8 and 12) ...	(4,132,804)	1,295,893
INVESTED CAPITAL—NON-INTEREST-BEARING:		
Unrecovered costs (recovered) deferred (Notes 1b and 8)	4,132,804	(917,258)
Net revenue payable to Government of Panama (Note 12) .....	.....	(378,635)
Investment at beginning of fiscal year	258,511,310	249,101,935
Miscellaneous receipts deposited into the U.S. Treasury	576,536	368,145
Due U.S. Treasury for undeposited receipts	<u>(282,793)</u>	<u>(576,536)</u>
Plant reactivations .....	.....	493,940
Interest on interest-bearing investment (Note 9)	<u>9,943,192</u>	<u>9,123,826</u>
INVESTED CAPITAL—NON-INTEREST-BEARING AT END OF FISCAL YEAR	<u>\$268,748,245</u>	<u>\$258,511,310</u>

The accompanying notes are an integral part of this statement.

Table 3A.—Statement of Changes in the Investment of the United States Government
Fiscal Year Ended September 30, 1983

	Invested Capital		Emergency Fund	Operating Funds	Capital Funds	Total
	Interest-Bearing	Non-Interest-Bearing				
INVESTMENT AT OCTOBER 1, 1982.....	\$89,763,345	\$258,511,310	\$10,000,000	\$74,440,013	\$21,424,115	\$454,138,783
Appropriation by the Congress for fiscal year 1983.....	.....	.....	.....	405,378,634	29,024,000	434,402,634
	<u>89,763,345</u>	<u>258,511,310</u>	<u>10,000,000</u>	<u>479,818,647</u>	<u>50,448,115</u>	<u>888,541,417</u>
INCREASES IN INVESTMENT:						
Plant reactivations.....	.....	.....	.....	.....	.....	.....
Prior year receipts deposited into the U.S. Treasury.....	.....	576,536	.....	.....	.....	576,536
Disbursements from capital appropriations.....	21,930,232	.....	.....	.....	(21,930,232)	.....
Disbursements from operating appropriations.....	395,875,547	.....	.....	(395,875,547)	.....	.....
Funds covered into U.S. Treasury (Note 9).....	(28,200,421)	.....	.....	.....	.....	(28,200,421)
Repayment to the U.S. Treasury of FY 1980 appropriation lapsed (Note 9).....	28,200,421	.....	.....	(28,200,421)	.....	.....
Interest on interest-bearing investment.....	.....	9,943,192	.....	.....	.....	9,943,192
Property transferred from other U.S. Government agencies.....	3,356	.....	.....	.....	.....	3,356
Unrecovered costs deferred (Notes 1b and 8).....	.....	4,132,804	.....	.....	.....	4,132,804
	<u>417,809,135</u>	<u>14,652,532</u>	<u>.....</u>	<u>(424,075,968)</u>	<u>(21,930,232)</u>	<u>(13,544,533)</u>
DECREASES IN INVESTMENT:						
Funds to be covered into the U.S. Treasury.....	.....	.....	.....	10,520,462	.....	10,520,462
Receipts deposited into the U.S. Treasury.....	398,461,068	.....	.....	.....	.....	398,461,068
Due U.S. Treasury for un deposited receipts.....	.....	282,793	.....	.....	.....	282,793
Property transferred to the Government of Panama.....	141,303	.....	.....	.....	.....	141,303
Property transferred to other U.S. Government agencies.....	64,519	.....	.....	.....	.....	64,519
Net loss (Notes 1b, 8 and 12).....	.....	4,132,804	.....	.....	.....	4,132,804
	<u>398,666,890</u>	<u>4,415,597</u>	<u>.....</u>	<u>10,520,462</u>	<u>.....</u>	<u>413,602,949</u>
INVESTMENT AT SEPTEMBER 30, 1983.....	<u>\$108,905,590</u>	<u>\$268,748,245</u>	<u>\$10,000,000</u>	<u>\$45,222,217</u>	<u>\$28,517,883</u>	<u>\$461,393,935</u>
	(Note 9)					

The accompanying notes are an integral part of this statement.

Table 3B.—Statement of Changes in the Investment of the United States Government
Fiscal Year Ended September 30, 1982

	Invested Capital		Emergency Fund	Operating Funds	Capital Funds	Total
	Interest-Bearing	Non-Interest-Bearing				
INVESTMENT AT OCTOBER 1, 1981	\$128,419,111	\$249,101,935	\$10,000,000	\$59,433,349	\$25,475,158	\$472,429,553
Appropriation by the Congress for fiscal year 1982 .....	.....	.....	.....	400,754,000	19,766,000	420,520,000
	<u>128,419,111</u>	<u>249,101,935</u>	<u>10,000,000</u>	<u>460,187,349</u>	<u>45,241,158</u>	<u>892,949,553</u>
INCREASES IN INVESTMENT:						
Plant reactivations .....	.....	493,940	.....	.....	.....	493,940
Prior year receipts deposited into the U.S. Treasury .....	.....	368,145	.....	.....	.....	368,145
Expenditures from capital appropriations	23,817,043	.....	.....	.....	(23,817,043)	.....
Expenditures from operating appropriations	379,957,490	.....	.....	(379,957,490)	.....	.....
Interest on interest-bearing investment .....	.....	9,123,826	.....	.....	.....	9,123,826
Property transferred from other U.S. Government agencies	72,421	.....	.....	.....	.....	72,421
Net revenue (Notes 1b and 8) .....	.....	378,635	.....	.....	.....	378,635
	<u>403,846,954</u>	<u>10,364,546</u>	<u>.....</u>	<u>(379,957,490)</u>	<u>(23,817,043)</u>	<u>10,436,967</u>
DECREASES IN INVESTMENT:						
Funds to be covered into the U.S. Treasury .....	.....	.....	.....	.....	.....	.....
Receipts deposited into the U.S. Treasury	440,139,216	.....	.....	5,789,846	.....	5,789,846
Due U.S. Treasury for undeposited receipts .....	.....	576,536	.....	.....	.....	440,139,216
Property transferred to the Government of Panama	1,790,580	.....	.....	.....	.....	576,536
Property transferred to other U.S. Government agencies	572,924	.....	.....	.....	.....	1,790,580
Net revenue payable to the Government of Panama .....	.....	378,635	.....	.....	.....	572,924
(Notes 1b, 8 and 12) .....	.....	.....	.....	.....	.....	378,635
	<u>442,502,720</u>	<u>955,171</u>	<u>.....</u>	<u>5,789,846</u>	<u>.....</u>	<u>449,247,737</u>
INVESTMENT AT SEPTEMBER 30, 1982	<u>\$89,763,345</u>	<u>\$258,511,310</u>	<u>\$10,000,000</u>	<u>\$74,440,013</u>	<u>\$21,424,115</u>	<u>\$454,138,783</u>
	(Note 9)					

The accompanying notes are an integral part of this statement.

Table 4.—Statement of Changes in Financial Position
Fiscal Years Ended September 30, 1983 and 1982

	1983	1982
SOURCE OF FUNDS:		
From Operations:		
Revenue	<u>\$393,957,023</u>	<u>\$431,984,464</u>
Less operating expenses:		
Interest on interest-bearing investment	9,943,192	9,123,826
Payments to the Government of Panama (Note 12)	71,190,136	81,193,887
Other expenses	<u>316,956,499</u>	<u>340,370,858</u>
Total operating expenses	<u>398,089,827</u>	<u>430,688,571</u>
Net operating revenue (loss) (Notes 1b, 8 and 12)	(4,132,804)	1,295,893
Unrecovered costs for fiscal year 1981 (recovered) deferred (Notes 1b and 8)		(917,258)
Net revenue payable to Government of Panama (Notes 1b, 8 and 12)		(378,635)
Unrecovered costs for fiscal year 1983 deferred (Notes 1b, 8 and 12)	4,132,804	
Add transactions not requiring outlay of funds:		
Depreciation (Note 1e)	18,514,996	18,754,070
Provision for lock overhauls (Note 1i)	4,354,000	3,544,000
Provision for casualty losses (Note 1j)	3,117,088	12,200,000
Other	<u>1,970,819</u>	<u>6,454,007</u>
	<u>27,956,903</u>	<u>40,952,077</u>
Change in investment of the U.S. Government:		
Interest on interest-bearing investment	9,943,192	9,123,826
Receipts deposited into U.S. Treasury	(398,461,068)	(440,139,216)
Disbursements from appropriated funds	446,006,200	403,774,533
Repayment to the U.S. Treasury of the fiscal year 1980 appropriation lapsed	(28,200,421)	
Net property transfers	(202,466)	(2,291,082)
Other	<u>293,744</u>	<u>285,548</u>
	<u>29,379,181</u>	<u>(29,246,391)</u>
Amortization of advances for capital	<u>919,711</u>	<u></u>
Advances for capital being amortized (Notes 1d, 6d and 13)	<u>2,480,771</u>	<u>11,956,238</u>
Total source of funds	<u>60,736,566</u>	<u>23,661,924</u>
APPLICATION OF FUNDS:		
Lock overhauls expenditures	5,040,623	3,214,853
Casualty losses	4,214,134	12,288,023
Accrued capital expenditures	<u>21,704,598</u>	<u>24,903,322</u>
Total application of funds	<u>30,959,355</u>	<u>40,406,198</u>
INCREASE (DECREASE) IN WORKING CAPITAL	<u>\$29,777,211</u>	<u>\$(16,744,274)</u>
ANALYSIS OF CHANGES IN WORKING CAPITAL:		
Increase (decrease) in current assets:		
Cash	\$ (185,931)	\$ 26,439
Receivables	1,055,670	(1,665,437)
Inventories	7,429,667	(5,703,715)
Other	<u>150,646</u>	<u>(156,336)</u>
	<u>8,450,052</u>	<u>(7,499,049)</u>
Decrease (increase) in current liabilities:		
Accounts payable	21,268,127	(4,658,980)
Accrued liabilities	(555,681)	(3,587,824)
Other	<u>614,713</u>	<u>(998,421)</u>
	<u>21,327,159</u>	<u>(9,245,225)</u>
INCREASE (DECREASE) IN WORKING CAPITAL	<u>\$ 29,777,211</u>	<u>\$(16,744,274)</u>

The accompanying notes are an integral part of this statement.

**Table 5.—Statement of Status of Appropriations
Fiscal Years Ended September 30, 1983 and 1982**

	1983	1982
SOURCE OF APPROPRIATIONS:		
Operating funds:		
Current year operating appropriation	<u>\$405,378,634</u>	<u>\$400,754,000</u>
Obligated operating funds brought forward:		
Fiscal year 1980	23,684,912	27,699,623
Fiscal year 1981	5,623,556	31,733,726
Fiscal year 1982	<u>45,131,545</u>	<u>.....</u>
	<u>74,440,013</u>	<u>59,533,349</u>
	<u>479,818,647</u>	<u>460,187,349</u>
Capital funds:		
Current year capital appropriation (no year)	<u>29,024,000</u>	<u>19,766,000</u>
Obligated capital funds brought forward:		
Fiscal year 1980	358,549	4,162,768
Fiscal year 1981	4,618,448	13,208,244
Fiscal year 1982	<u>10,728,673</u>	<u>.....</u>
	<u>15,705,670</u>	<u>17,371,012</u>
Unobligated capital funds (no year) brought forward:		
Fiscal year 1980	599,957	1,288,708
Fiscal year 1981	845,934	6,815,438
Fiscal year 1982	<u>4,272,554</u>	<u>.....</u>
	<u>5,718,445</u>	<u>8,104,146</u>
	<u>50,448,115</u>	<u>45,241,158</u>
Emergency fund (no year)	<u>10,000,000</u>	<u>10,000,000</u>
TOTAL SOURCE OF APPROPRIATIONS	<u><u>\$540,266,762</u></u>	<u><u>\$515,428,507</u></u>

**Table 5.—Statement of Status of Appropriations
Fiscal Years Ended September 30, 1983 and 1982**

	1983	1982
APPLICATION OF APPROPRIATIONS:		
Operating funds:		
Expenditures from operating appropriations:		
Repayment to the U.S. Treasury of the fiscal year 1980 appropriation lapsed	\$28,200,421	\$.....
Fiscal year 1980	21,121,981	4,927,818
Fiscal year 1981	2,830,821	26,279,322
Fiscal year 1982	38,274,112	348,750,350
Fiscal year 1983	<u>333,648,633</u>	<u>.....</u>
	<u>424,075,968</u>	<u>379,957,490</u>
Obligated operating funds:		
Fiscal year 1980	2,543,398	23,684,912
Fiscal year 1981	3,424,423	5,623,556
Fiscal year 1982	4,717,168	45,131,545
Fiscal year 1983	<u>34,537,228</u>	<u>.....</u>
	<u>45,222,217</u>	<u>74,440,013</u>
Unbligated operating funds lapsed	<u>10,520,462</u>	<u>5,789,846</u>
	<u>479,818,647</u>	<u>460,187,349</u>
Capital funds:		
Expenditures from capital appropriations:		
Fiscal year 1980	483,026	4,492,971
Fiscal year 1981	3,088,345	14,559,299
Fiscal year 1982	11,799,504	4,764,773
Fiscal year 1983	<u>6,559,357</u>	<u>.....</u>
	<u>21,930,232</u>	<u>23,817,043</u>
Obligated capital funds:		
Fiscal year 1980	273,632	358,549
Fiscal year 1981	2,058,558	4,618,448
Fiscal year 1982	924,503	10,728,673
Fiscal year 1983	<u>14,774,992</u>	<u>.....</u>
	<u>18,031,685</u>	<u>15,705,670</u>
Unbligated capital funds (no year):		
Fiscal year 1980	201,848	599,957
Fiscal year 1981	317,480	845,934
Fiscal year 1982	2,277,219	4,272,554
Fiscal year 1983	<u>7,689,651</u>	<u>.....</u>
	<u>10,486,198</u>	<u>5,718,445</u>
	<u>50,448,115</u>	<u>45,241,158</u>
Unbligated emergency fund (no year)	<u>10,000,000</u>	<u>10,000,000</u>
TOTAL APPLICATION OF APPROPRIATIONS	<u>\$540,266,762</u>	<u>\$515,428,507</u>

The accompanying notes are an integral part of this statement.

Table 6.—Statement of Property, Plant and Equipment
September 30, 1983 and 1982

	1983		1982	
	Cost	Depreciation and valuation allowances	Cost	Depreciation and valuation allowances
Titles and treaty rights.....	\$14,728,889	\$3,774,278	\$14,728,889	\$3,406,056
Interest during construction.....	50,892,311	50,892,311	50,892,311	50,892,311
Canal excavation, fills and embankments.....	347,536,452	88,974,673	336,893,372	74,355,710
Canal structures and equipment.....	223,188,786	107,678,797	226,696,154	109,506,598
Supporting and general facilities.....	159,531,771	98,621,330	157,669,770	95,231,887
Minor items of plant and equipment.....	10,081,037	10,081,037	10,629,593	10,629,593
Facilities held for future use.....	3,166,947	2,508,355	3,166,947	2,508,355
Plant additions in progress.....	20,546,230	.....	12,491,475	.....
Suspended construction projects.....	40,145,798	40,145,798	40,145,798	40,145,798
TOTAL.....	<u>\$869,818,221</u>	<u>\$402,676,579</u>	<u>\$853,314,309</u>	<u>\$386,676,308</u>

The accompanying notes are an integral part of this statement.

NOTES TO FINANCIAL STATEMENTS

1. Summary of Significant Accounting Policies.

The Comptroller General of the United States approved the Accounting Principles and Standards Statement of the Panama Canal Commission in his letter dated September 14, 1982. A summary of significant accounting policies follows:

a. *Accounting and reporting.* As required by section 1311(a) of the Panama Canal Act of 1979, hereinafter referred to as the Act, the accounts of the Commission are maintained pursuant to the Accounting and Auditing Act of 1950. This requires that the principles, standards and related requirements for accounting be met, as prescribed by the Comptroller General of the United States, after consulting with the Secretary of the Treasury and the Director of the Office of Management and Budget concerning their accounting, financial reporting and budgetary needs. The Accounting and Auditing Act of 1950 also requires that the accounts be maintained on an accrual basis.

b. *Cost recovery.* As required in section 1341(e)(1) of the Act, the application of generally accepted accounting principles to the Panama Canal Commission, a United States Government agency comparable to a rate-regulated public utility, determines the manner in which costs are recognized. The basis for tolls rates is prescribed in section 1602(b) of the Act. This section of the Act, known as the "statutory tolls formula," provides that:

"Tolls shall be prescribed at rates calculated to produce revenues to cover as nearly as practicable all costs of maintaining and operating the Panama Canal, together with the facilities and appurtenances related thereto, including unrecovered costs incurred on or after the effective date of this Act, interest, depreciation, payments to the Republic of Panama pursuant to paragraph 5 of Article III and paragraph 4(a) and (b) of Article XIII of the Panama Canal Treaty of 1977, and capital for plant replacement, expansion, and improvements. Tolls shall not be prescribed at rates calculated to produce revenues sufficient to cover payments to the Republic of Panama pursuant to paragraph 4(c) of Article XIII of the Panama Canal Treaty of 1977."

Under this statutory tolls formula, any unrecovered costs are to be recovered from subsequent revenues. The amount for recovery from subsequent revenues is transferred from Invested Capital to an account within the Other Assets classification. Unrecovered costs are charged back to Invested Capital to the extent subsequent annual revenues exceed annual costs.

c. *Property, plant and equipment.* Property, plant and equipment are recorded at cost or, if acquired from another Government agency, at the value determined by the Director of the Office of Management and Budget. Administrative and other related general expenses are recovered currently and therefore not capitalized. The cost of minor items of property, plant and equipment is charged to expense as incurred.

d. *Advances for capital.* A portion of tolls in excess of depreciation recoveries may be programmed annually by the Board of Directors for plant replacement, expansion, or improvements. Such funds are considered capital advances from Canal users. Upon utilization, these advances are amortized through an offset to depreciation expense in an amount calculated to approximate the depreciation on assets acquired with such advances.

e. *Depreciation.* Property, plant and equipment are depreciated over their estimated service lives at rates computed using a straight-line method with additional annual depreciation, identified as composite, to provide for premature plant retirements.

f. *Accounts receivable.* Uncollectible accounts receivable of the Panama Canal Commission are recognized as a reduction in revenue when written off. Any subsequent collections of Commission accounts receivable previously written off are recorded as revenue. The allowance for doubtful accounts which appeared on the Commission books at September 30, 1982, was applicable only to the receivables of predecessor agencies.

g. *Inventories.* Operating materials and supplies are stated at average cost, plus cost of transportation to the ultimate destination on the Isthmus of Panama. An allowance has been established to reflect the estimated cost of obsolete and excess stock.

h. *Retirement benefits.* Employer payments to the contributory United States Civil Service Retirement System and to the Republic of Panama Social Security System are charged to expense. The Commission has no liability for future payments to employees under these systems.

Non-United States citizen employees who retired from predecessor agencies prior to October 5, 1958, are not covered by the United States Civil Service Retirement System but do receive benefits under a separate annuity plan. Payments made under this annuity plan are recorded as a current year expense. The liability of the Commission for future annuity payments to these former employees or their eligible widows is reflected in the balance sheet as "Retirement Benefits to Certain Former Employees of Predecessor Agencies" and an equal amount is recorded as a Deferred Charge.

As required by the Act, the Panama Canal Commission is liable for the increase in the unfunded liability of the United States Civil Service Retirement Fund which is attributable to benefits payable from that fund to, or on behalf of, employees and their survivors under the early retirement provisions of the Act. The annual installment to liquidate the increased liability is determined by the Office of Personnel Management.

i. *Reserve for lock overhauls.* A reserve is provided through an annual charge to expense to cover the estimated cost of periodic lock overhauls.

j. *Reserve for casualty losses.* A reserve is provided through an annual charge to expense to cover the estimated cost of marine accidents and other casualty losses.

k. *Housing use rights.* No monetary value is assigned to the rights granted to the United States Government by the Republic of Panama to use Canal Area housing transferred to the Republic of Panama under the terms of the Panama Canal Treaty of 1977. The cost to manage, maintain and provide livability improvements to these quarters is charged to expense. Rental income is included in other revenues.

2. Plant Valuation Allowances.

At July 1, 1951, certain valuation allowances for property, plant and equipment transferred from the Panama Canal (agency) to the Panama Canal Company and the Canal Zone Government were established, to reduce to usable value the costs of the assets transferred. At October 1, 1979, such valuation allowances as were applicable to the assets transferred from the Panama Canal Company and the Canal Zone Government to the Panama Canal Commission were carried forward. At September 30, 1983 and at September 30, 1982, these valuation allowances amounted to \$99.3 million comprised of: (a) \$5.6 million to reduce to usable value the cost of property, plant and equipment transferred; (b) \$50.9 million to offset interest costs imputed for the original Canal construction period; and (c) \$42.8 million to offset the cost of defense facilities and suspended construction projects, the latter being principally the partial construction of a third set of locks abandoned in the early part of World War II.

Property, plant and equipment offset by valuation allowances, when fully or partially reactivated, are reinstated by a reduction in the valuation allowance and by an increase to the non-interest-bearing investment of the United States Government in proportion to the value to the Commission of the reactivated asset.

3. Depreciation as a Percentage of Average Cost of Plant.

The provision for depreciation, expressed as a percentage of average cost of depreciable plant exclusive of valuation allowances, was 2.55% for fiscal year 1983 and 2.49% for fiscal year 1982.

4. Cash and Fund Balances.

As of September 30, 1983, the cash and fund balances of \$85,314,410 are made up of \$80,721,975 on deposit in the United States Treasury, \$1,647,360 on deposit in commercial banks, and \$2,945,075 on hand. Of the total, \$83,740,100 is comprised of current budgetary accounts which include appropriated funds for operations, capital and the emergency fund.

As of September 30, 1982, the cash and fund balances of \$107,624,370 were made up of \$104,375,796 on deposit in the United States Treasury, \$2,021,770 on deposit in commercial banks, and \$1,226,804 on hand. Of the total, \$105,864,128 was comprised of current budgetary accounts which included appropriated funds for operations, capital and the emergency fund.

The emergency fund represents the amount on deposit in the United States Treasury which is to be used "... to defray emergency expenditures and to insure the continuous efficient and safe operation of the Panama Canal when funds appropriated for the operation and maintenance of the Canal prove insufficient for such purposes. . . ."

The postal fund consists of outstanding money orders, postal savings and interest accrued thereon. This fund will remain available until liquidated. The trust fund primarily includes deposits made by customers for future tolls, and other service payments.

5. Panama Canal Commission Fund.

The Panama Canal Commission Fund, as established by the Panama Canal Act of 1979 (Public Law No. 96-70), is made up of receipts deposited in the United States Treasury less appropriation warrants issued during the fiscal year. The balance in this account, \$146.3 million as of September 30, 1983, and \$143.9 million as of September 30, 1982, is available for future appropriations.

Section 1302 of the Panama Canal Act of 1979 (Public Law No. 96-70) provides that all appropriations necessary to operate the Panama Canal shall be issued from the Panama Canal Commission Fund. The appropriations for fiscal year 1980 were issued to the Commission from the General Fund of the United States Treasury. The status of the amount still owed to the General Fund of the United States Treasury for fiscal year 1980 is as follows:

	<i>Millions of Dollars</i>	
Operating Appropriation.....	\$427.2	
Capital Appropriation	<u>36.6</u>	\$463.8
Repaid to General Fund (07/81)	(350.0)	
Repaid to General Fund (12/82)	<u>(28.2)</u>	<u>(378.2)</u>
Amount owed General Fund of U.S. Treasury as of September 30, 1983		<u>\$ 85.6</u>

6. Accounting Changes.

a. "Unobligated operating funds to be returned to the U.S. Treasury" was deleted in fiscal year 1982. This change has no impact on the financial position or operating results of the Commission.

b. The cost of early retirement provisions of the Panama Canal Act of 1979 was added to the balance sheet in fiscal year 1982 as a liability of the Commission for future payments to the United States Civil Service Retirement Fund and an equal amount was recorded as a Deferred Charge. This change has no impact on the financial position or operating results of the Commission.

c. Effective with fiscal year 1982, there was a change in the method of applying the accounting policy for dredging costs. The effect of this change was to increase expense and reduce the capital advance requirement. The precise dollar magnitude of this change cannot be measured since these amounts were not isolated in the Commission's operating accounts. However, the change did not have any impact on net operating revenue. The recurring costs of dredging the waterway are charged to expense. Non-recurring dredging costs for substantial improvements and betterments to the waterway are considered additions to plant and are capitalized and depreciated over their estimated service lives.

d. Amortization of Advances for Capital (see Note 1d) was implemented in fiscal year 1983 based on the following procedure: At the beginning of each fiscal year, an amount equivalent to any capital advance funds disbursed for plant replacement, expansion, or improvement during the previous fiscal year is reclassified and amortized over the average accounting life of assets acquired in the fiscal year in which the funds were expended.

e. The intent of the lock overhauls reserve policy is to normalize costs directly related to the periodic repair and maintenance of the locks. Repair and maintenance costs of caissons, which are used exclusively for lock overhauls, have increased dramatically in recent years. To minimize significant fluctuations in results of operations, these costs are now charged to the reserve. In fiscal year 1983, \$754,136 for repair and maintenance of caissons was charged to the reserve for lock overhauls.

7. Other Receivables.

Other receivables represent services provided in connection with ship accidents for which the vessel is considered to be responsible awaiting final settlement. This amount is also included in the computation of estimated liabilities established for ship accident claims.

8. Unrecovered Costs Due from Subsequent Revenues.

Pursuant to the provisions of section 1602(b) of the Panama Canal Act of 1979 (Public Law No. 96-70), the fiscal year 1983 net loss from operations of \$4.1 million was deferred as an unearned cost to be recovered from subsequent revenues. Also, in accordance with section 1341(e) of that Act such unearned costs must be deducted from any future net operating revenues due the Government of Panama.

Pursuant to the provisions of section 1341(e) and section 1602(b) of the Panama Canal Act of 1979 (Public Law No. 96-70), the net loss of \$0.9 million from fiscal year 1981 operations was recovered from fiscal year 1982 operating revenue and the net amount of \$0.4 million was paid to the Government of Panama in fiscal year 1983.

9. Interest-Bearing Investment of the United States Government.

The interest-bearing investment of the United States Government in the Panama Canal is determined based on section 1603(a) of the Panama Canal Act of 1979. The interest-bearing investment of the United States Government at September 30, 1983 and September 30, 1982, was determined as follows:

	<i>Millions of Dollars</i>
Investment at September 30, 1981	\$128.4
Fiscal year 1982 transactions:	
Disbursements	\$403.8
Receipts	(440.1)
Net property transfers	(2.3)
Net change	(38.6)
Investment at September 30, 1982	\$ 89.8
Fiscal year 1983 transactions:	
Disbursements	\$446.0
Receipts	(398.5)
Repayment to United States Treasury of fiscal year 1980 lapsed funds	(28.2)
Net property transfers	(0.2)
Net change	19.1
Investment at September 30, 1983	<u>\$108.9</u>

10. Accounts Payable—United States Government Agencies.

Included in the accounts payable to United States Government agencies are ship accident and other claims in the amount of \$19.1 million for fiscal year 1982 that were forwarded to the Department of Justice in Washington, D.C. after reaching a settlement or receiving a judgment for approval for payment.

11. Ship Accident Claims.

Liabilities arising from ship accident claims are divided into fund and non-fund categories. The fund category is made up of the following:

- a. Accidents which occurred prior to October 1, 1979.
- b. Accidents which occurred within the locks after September 30, 1979.
- c. Accidents which occurred outside the locks after September 30, 1979, for which the claim or estimated liability is \$120,000 or less per ship per accident.

Settlement of liabilities for ship accidents which occurred outside the locks where the claim exceeds \$120,000 requires specific Congressional approval. Until Congressional action is completed, liabilities for these accidents are booked as non-fund.

12. Payments to the Government of Panama.

Based on Article III and Article XIII of the Treaty, the Government of Panama has received payment for public services, fixed annuity and thirty

cents per Panama Canal net ton. In addition to these payments, an amount of \$0.4 million was paid to the Government of Panama during fiscal year 1983 in accordance with paragraph 4(c) of Article XIII, which states that an annual amount of up to \$10 million will be paid out of operating revenues to the extent that such revenues exceed expenditures of the Commission. This amount is subject to the limitations set forth in section 1341(e) of the Panama Canal Act of 1979 (Public Law No. 96-70).

13. Advances for Capital—Transit Booking System Fees.

During fiscal year 1982, with approval of the Board of Directors, the Commission tested a system whereby shippers, for a fee, could make an advance reservation for vessel transit. The test continued for approximately four months generating funds of \$5.9 million. The system was activated in fiscal year 1983 and generated funds of \$1.2 million. Such funds are considered capital advances from Canal users. By direction of the Board of Directors, these fees are set aside for capital improvements.

14. Reserve for Casualty Losses.

The reserve for casualty losses at September 30, 1983 of \$12.8 million includes \$12.5 million for marine accidents and \$0.3 million for other casualty losses. As a result of a management analysis of accident frequency and severity, the regular monthly accrual of \$0.8 million was adjusted downward to recognize in the reserve account balance the decreased loss trend for larger vessels and the reduced potential loss exposure resulting from the significant drop in overall transit levels. Accordingly, the reserve for marine accidents was adjusted during the fiscal year to maintain a balance of \$12.5 million in the account.

The reserve for casualty losses at September 30, 1982 of \$9.1 million included \$8.8 million for marine accidents and \$0.3 million for other casualty losses. The monthly accrual for the reserve for marine accidents in fiscal year 1982 was \$1.0 million per month for a total of \$12.0 million.

15. Extraordinary Retirement.

During fiscal year 1982, the retirement of SIP-7 Emergency Gates and Miter Gate Latching Devices was approved at the March 1982 meeting of the Board of Directors. The retirement of these systems was recommended by the United States Army Corps of Engineers and reviewed by selected specialists of the Panamanian Society of Engineers and Architects at the request of the Panamanian Board members. The specialists also recommended the elimination of these systems. The net amount charged to operations was \$2.6 million.

16. Contingent Liabilities and Commitments.

In addition to recorded liabilities, the estimated maximum contingent liability which could result from pending claims and lawsuits was \$9.8 million at September 30, 1983 and \$10.9 million at September 30, 1982. In

the opinion of management and Commission counsel, these pending claims and lawsuits will be resolved with no material adverse effect on the financial condition of the agency.

Commitments under uncompleted construction contracts and unfilled purchase orders amounted to \$30.8 million at September 30, 1983, and \$36.4 million at September 30, 1982. Of this amount, \$0.2 million in unfilled purchase orders were prepaid as of September 30, 1983, and \$0.1 million as of September 30, 1982. In addition, the Panama Canal Commission is liable for an indeterminable amount with respect to death and disability payments under the Federal Employees' Compensation Act.

Cash and negotiable securities of a kind acceptable by the United States Government in the amount of \$6.5 million were held by United States depositories designated by the Panama Canal Commission at September 30, 1983 and \$7.0 million at September 30, 1982 to guarantee payment by third parties of their obligations.

The Panama Canal Treaty of 1977, Article XIII, paragraph 4(c), provides that an annual amount of up to \$10 million per year be paid to the Government of Panama out of operating revenues to the extent that such revenues exceed expenditures. Payment to the Government of Panama is subject to the limitations set forth in section 1341(e) of the Panama Canal Act of 1979 (Public Law No. 96-70). In the event operating revenues in any year do not produce a surplus sufficient to cover this payment, the unpaid balance shall be paid from operating surpluses in future years up to the amount available from these surpluses. As of September 30, 1983, the balance contingently payable to the Government of Panama amounts to \$36.9 million. As of September 30, 1982, the balance contingently payable to the Government of Panama amounted to \$26.9 million.

17. Treaty Impact.

On September 7, 1977, the United States of America and the Government of Panama signed the Panama Canal Treaty of 1977. The Treaty provided for the establishment of the Panama Canal Commission on October 1, 1979, to assume certain operational responsibilities for the Canal until December 31, 1999. When the Treaty terminates on December 31, 1999, the Government of Panama shall assume total responsibility for the management, operation, and maintenance of the Panama Canal, which shall be turned over in operating condition and free of liens and debts, except as the two Parties may otherwise agree. The effects of these long-range requirements are not considered in the financial statements.

Chapter VI

STATISTICAL TABLES

Shipping Statistics

Table 1.—Panama Canal Traffic—Fiscal Years 1974 Through 1983

Fiscal year	Total traffic			Traffic assessed tolls on net tonnage basis		Traffic assessed tolls on displacement tonnage basis	
	Number of transits	Tolls	Long tons of cargo	Number of transits	Panama Canal net tonnage	Number of transits	Displacement tonnage
OCEANGOING COMMERCIAL TRAFFIC ¹							
1974	14,033	\$119,422,568	147,906,914	13,984	135,715,628	49	200,376
1975	13,609	141,898,218	140,101,459	13,565	135,053,680	44	171,006
1976	12,157	134,204,402	117,212,266	12,123	127,778,919	34	131,258
*TQ	3,037	35,272,300	30,888,300	3,031	33,686,757	6	23,205
1977	11,896	163,826,571	122,978,785	11,868	133,353,132	28	108,642
1978	12,677	194,773,111	142,518,288	12,647	156,907,260	30	109,798
1979	12,935	208,376,741	154,110,866	12,902	167,470,601	33	136,600
1980	13,507	291,838,590	167,214,935	13,476	182,063,175	31	137,593
1981	13,884	301,762,600	171,221,762	13,847	188,656,491	37	111,418
1982	14,009	323,958,366	185,452,332	13,976	202,884,207	33	129,684
1983	11,707	285,983,805	145,590,759	11,668	169,503,918	39	132,431
OCEANGOING U.S. GOVERNMENT TRAFFIC ¹							
1974	248	\$1,831,535	1,748,963	218	2,021,966	30	142,807
1975	170	1,376,797	526,497	148	1,287,777	22	122,953
1976	85	727,983	177,508	68	641,137	17	87,728
*TQ	18	166,779	55,383	13	118,300	5	65,025
1977	88	805,983	212,677	59	577,483	29	165,148
1978	103	889,093	291,115	70	589,085	33	214,145
1979	111	1,054,169	357,482	80	726,755	31	207,640
1980	101	1,515,326	396,481	73	844,748	28	217,055
1981	89	1,241,442	301,776	68	705,936	21	143,121
1982	110	1,546,746	285,451	67	794,282	43	309,206
1983	125	1,721,925	354,873	77	812,840	48	350,699
FREE OCEANGOING TRAFFIC ^{1 2}							
1974	23	.....	.....	11	56,364	12	27,244
1975	7	.....	.....	2	694	5	10,400
1976	38	.....	5,635	17	22,854	21	41,655
*TQ	4	.....	.....	3	1,474	1	1,800
1977	13	.....	380	8	21,252	5	10,380
1978	5	.....	.....	4	3,789	1	1,100
1979	10	.....	1	8	4,527	2	2,194
1980	6	.....	.....	3	1,686	3	4,810
1981	11	.....	.....	4	2,248	7	8,544
1982	23	.....	.....	9	5,010	14	21,903
1983	14	.....	2,504	9	9,119	5	5,986
TOTAL OCEANGOING TRAFFIC ¹							
1974	14,304	\$121,254,103	149,655,877	14,213	137,793,958	91	370,427
1975	13,786	143,275,015	140,627,956	13,715	136,342,151	71	304,359
1976	12,280	134,932,385	117,395,409	12,208	128,442,910	72	260,641
*TQ	3,059	35,439,079	30,943,683	3,047	33,806,531	12	90,030
1977	11,997	164,632,554	123,191,842	11,935	133,951,867	62	284,170
1978	12,785	195,662,204	142,809,403	12,721	157,500,134	64	325,043
1979	13,056	209,430,910	154,468,349	12,990	168,201,883	66	346,434
1980	13,614	293,353,916	167,611,416	13,552	182,909,609	62	359,458
1981	13,984	303,004,042	171,523,538	13,919	189,364,675	65	263,083
1982	14,142	325,505,112	185,737,783	14,052	203,683,499	90	460,793
1983	11,846	287,705,730	145,948,136	11,754	170,325,877	92	489,116

Table 1.—Panama Canal Traffic—Fiscal Years 1974 Through 1983
(Continued)

Fiscal year	Total traffic			Traffic assessed tolls on net tonnage basis		Traffic assessed tolls on displacement tonnage basis	
	Number of transits	Tolls	Long tons of cargo	Number of transits	Panama Canal net tonnage	Number of transits	Displacement tonnage
SMALL COMMERCIAL TRAFFIC³							
1974	826	\$62,376	23,496	823	77,722	3	611
1975	804	52,684	7,939	798	54,174	6	1,120
1976	745	49,314	6,866	737	50,281	8	1,229
*TQ	204	24,785	1,236	204	15,389	...	.....
1977	759	39,960	2,820	751	48,717	8	1,108
1978	792	63,526	6,962	785	57,827	7	1,040
1979	936	76,591	7,718	934	69,229	2	94
1980	788	74,898	787	787	52,052	1	57
1981	791	65,604	1,355	788	44,962	3	279
1982	830	73,228	928	826	50,399	4	315
1983	810	73,887	669	810	48,033	...	.....
SMALL U.S. GOVERNMENT TRAFFIC³							
1974	110	\$3,312	.....	30	905	80	5,088
1975	110	4,729	1	27	1,023	83	6,382
1976	136	6,168	.....	18	1,159	118	8,019
*TQ	36	1,613	23	4	481	32	2,144
1977	277	12,851	.....	22	953	255	16,769
1978	187	9,504	8	25	1,446	162	10,742
1979	315	14,375	9	48	2,865	267	15,519
1980	276	15,129	.....	29	1,357	247	14,313
1981	225	10,712	2	16	751	209	10,431
1982	241	10,757	.....	12	415	229	10,973
1983	242	11,406	5	12	332	230	11,177
SMALL FREE TRAFFIC^{2 3}							
1974	29	.....	.....	18	663	11	917
1975	35	.....	31	30	1,518	5	185
1976	40	.....	50	31	1,484	9	701
*TQ	14	.....	.....	14	944	...	.....
1977	54	.....	10	50	2,840	4	466
1978	44	.....	20	42	2,986	2	72
1979	55	.....	3	47	2,160	8	632
1980	47	.....	.....	41	2,317	6	560
1981	50	.....	.....	41	2,613	9	1,012
1982	58	.....	70	40	2,803	18	1,172
1983	56	.....	8	39	2,321	17	2,010
TOTAL PANAMA CANAL TRAFFIC							
1974	15,269	\$121,319,791	149,679,373	15,084	137,873,248	185	377,043
1975	14,735	143,332,428	140,635,927	14,570	136,398,866	165	312,046
1976	13,201	134,987,867	117,402,325	12,994	128,495,834	207	270,590
*TQ	3,313	35,465,477	30,944,942	3,269	33,823,345	44	92,174
1977	13,087	164,685,365	123,194,672	12,758	134,004,377	329	302,513
1978	13,808	195,735,234	142,816,393	13,573	157,562,393	235	336,897
1979	14,362	209,521,876	154,476,079	14,019	168,276,137	343	362,679
1980	14,725	293,443,943	167,612,203	14,409	182,965,335	316	374,388
1981	15,050	303,080,358	171,524,895	14,764	189,413,001	286	274,805
1982	15,271	325,589,097	185,738,781	14,930	203,737,116	341	473,253
1983	12,954	287,791,023	145,948,818	12,615	170,376,563	339	502,303

¹Ongoing traffic includes ships of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on displacement basis (dredges, warships, etc.).

²Free traffic includes ships of the Colombian and Panamanian Governments and ships transiting for repair by the Commission.

³Includes vessels under 300 net tons, Panama Canal measurement (or under 500 displacement tons for vessels assessed on displacement tonnage).

*Effective 10-1-76 the fiscal year for all U.S. Government agencies was changed from July 1 through June 30, to October 1 through September 30. For continuity purposes, July, August, and September 1976 were designated the Transition Quarter.

Table 2.—Oceangoing Commercial Traffic by Months—Fiscal Years 1983 and 1982

	Number of Transits		Panama Canal Net Tonnage		Long Tons of Cargo		Tolls	
	1982-83	1981-82	1982-83	1981-82	1982-83	1981-82	1982-83	1981-82
October	1,123	1,180	16,748,651	16,591,293	14,529,313	15,546,844	\$26,680,275	\$26,637,319
November	976	1,136	14,437,271	15,932,467	12,367,803	15,295,840	23,155,390	25,613,161
December	1,038	1,163	15,159,478	16,460,847	12,748,194	15,418,010	24,211,772	26,430,646
January	994	1,075	14,281,604	15,317,488	11,852,750	13,722,414	22,886,215	24,517,551
February	901	1,094	13,006,067	15,928,473	10,838,426	14,465,187	20,902,219	25,433,447
March	1,044	1,288	14,616,188	18,698,264	12,738,743	17,235,779	24,892,027	29,704,319
April	999	1,235	14,448,846	17,234,149	11,845,294	15,790,821	25,421,185	27,476,077
May	955	1,226	13,618,472	17,845,384	11,590,813	15,580,589	24,122,215	28,360,999
June	953	1,187	13,729,177	17,717,961	11,674,644	16,191,720	24,069,247	28,242,150
July	926	1,173	13,257,916	17,513,133	11,831,786	16,048,348	23,411,530	27,967,133
August	923	1,167	13,456,699	17,569,244	11,977,380	15,601,215	23,733,896	27,923,726
September	875	1,085	12,743,549	16,075,504	11,595,613	14,555,565	22,497,834	25,651,838
Total	11,707	14,009	169,503,918	202,884,207	145,590,759	185,452,332	\$285,983,805	\$323,958,366
Average per month	976	1,167	14,125,326	16,907,017	12,132,563	15,454,361	\$23,831,984	\$26,996,530

NOTE: The above includes only commercial vessels of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on a displacement tonnage basis. Statistics on these vessels, except as relates to displacement tonnage, have been included in the table above.

Table 3.—Canal Traffic¹ by Flag of Vessel—Fiscal Year 1983

Flag	Number of transits	Measured tonnage		Tolls	Long tons of cargo
		Panama Canal net	Registered gross ²		
Argentina	1			\$3,295	
Australia	15	380,957	460,882	660,562	211,718
Austria	2	45,554	53,688	79,720	36,523
Bahamas	20	255,501	303,233	444,940	329,685
Belgium	51	1,084,038	1,281,913	1,848,925	1,316,523
Bermuda	10	110,521	108,357	165,970	9,743
Bolivia	10	85,110	106,700	148,942	61,070
Brazil	32	253,354	323,074	432,765	112,049
Bulgaria	16	97,459	121,343	165,831	78,768
Canada	16	131,700	158,667	225,001	120,327
Cayman Islands	5	10,716	11,856	19,344	14,832
Chile	112	1,282,436	1,408,953	2,196,417	1,508,319
Colombia	141	1,924,545	2,148,547	3,287,920	1,309,372
Costa Rica	3	2,841	2,976	4,252	591
Cuba	153	901,481	1,063,467	1,536,804	702,175
Cyprus	71	564,397	634,399	948,214	537,850
Czechoslovakia	1	16,610	20,596	27,739	27,299
Denmark	254	4,546,296	5,863,577	7,829,863	3,209,756
Dominican Republic	2	2,784	2,380	4,580	589
East Germany	11	58,918	68,959	89,328	11,545
Ecuador	358	2,997,876	3,541,583	5,031,222	2,528,540
Egypt	1	18,762	22,606	31,333	31,096
Finland	21	212,150	268,171	360,894	237,412
France	84	1,496,272	1,420,859	2,634,354	1,058,455
Ghana	2	19,682	26,008	32,377	8,056
Greece	888	13,617,830	15,768,158	22,853,694	15,588,888
Guatemala	2	7,008	8,256	11,703	8,688
Honduras	47	276,234	344,957	462,940	98,574
Hong Kong	5	80,531	95,332	144,884	114,364
India	25	419,780	510,672	688,553	417,307
Indonesia	18	241,636	292,548	421,535	255,086
Iraq	2	11,828	13,952	18,688	3,948
Ireland	4	56,739	68,056	99,295	87,383
Israel	70	1,413,719	1,857,746	2,483,997	928,884
Italy	110	1,294,145	1,591,775	2,238,082	877,832
Japan	1,165	21,049,780	18,494,869	35,093,265	11,674,473
Kuwait	4	48,289	62,257	80,046	30,199
Liberia	1,555	28,673,392	29,731,447	47,896,173	28,160,094
Malaysia	15	279,173	315,464	480,548	443,472
Malta	8	118,953	140,821	187,546	72,638
Mexico	70	1,248,997	1,566,224	2,029,990	1,078,764
Morocco	3	18,755	23,432	34,241	19,568
Netherlands	239	2,355,427	2,645,123	4,042,106	1,387,142
New Zealand	4	108,735	129,661	189,758	36,623
Nicaragua	5	42,505	48,000	75,064	29,989
Norway	413	7,621,610	8,368,058	13,014,280	7,086,846
Panama	1,697	20,310,756	20,586,091	34,185,992	18,385,482
People's Republic of China	104	1,939,476	2,241,344	3,226,307	1,881,661
Peru	272	2,705,136	3,283,154	4,628,169	2,930,110
Philippines	155	2,035,462	2,209,170	3,522,025	2,605,550
Poland	62	406,069	460,200	708,018	259,889
Portugal	3	1,890	3,770	5,184	836
Republic of China (Taiwan)	122	2,491,328	3,186,114	4,326,065	1,445,579
Rumania	2	9,650	12,506	15,874	2,145
Saudi Arabia	7	43,696	42,336	71,180	8,075
Singapore	219	4,477,634	4,234,306	7,474,962	3,372,335
South Africa	4	23,080	26,692	40,578	17,423
South Korea	220	3,662,743	4,439,018	6,311,106	4,331,706
Spain	137	845,012	898,669	1,479,093	622,210
Sri Lanka	1	29,301	32,758	53,621	46,640
Sweden	150	3,070,948	2,528,601	5,352,258	1,257,727
Switzerland	69	694,445	823,754	1,184,547	275,470
Turkey	9	75,729	99,250	129,173	81,645
United Arab Emirates	4	33,930	41,588	50,488	262
United Kingdom	623	10,395,070	12,759,449	17,739,449	9,994,217
United States	1,022	14,080,186	15,931,190	23,205,995	11,985,493
U.S.S.R.	458	2,976,473	3,245,376	5,083,914	1,493,228
Vanuatu	4	9,176	11,996	15,095	5,162
Venezuela	37	66,091	61,412	111,039	24,876
West Germany	193	2,722,146	3,182,083	4,756,054	1,911,687
Yugoslavia	87	897,143	1,047,410	1,523,385	770,320
Zaire	2	16,322	18,878	27,258	17,976
Total	11,707	169,503,918	182,906,697	\$285,983,805	145,590,759

¹Includes only commercial vessels of 300 net tons and over, Panama Canal measurement, or of 500 displacement tons and over on vessels paying tolls on displacement basis (dredges, warships, etc.).²Includes 16 transits where no registered tonnage was reported.

Table 3.—Canal Traffic¹ by Flag of Vessel—Fiscal Year 1983—Continued

NOTE.—In Canal traffic statistics, foreign naval vessels such as transports, supply ships, tankers, etc., with a measurement of 300 net tons (Panama Canal measurement) and over, and vessels of war, dredges, etc., with a displacement of 500 tons and over, are classified as oceangoing commercial vessels. Statistics on these vessels, except as related to displacement tonnage, have been included in the table above. As displacement tonnage cannot be combined with net tonnage, the following table shows statistics covering 39 vessels which transited the Canal during fiscal year 1983 and paid tolls on displacement tonnage.

<i>Flag</i>	<i>Type</i>	<i>Number of transits</i>	<i>Displace- ment tonnage</i>	<i>Tolls</i>
Argentina	Naval.....	1	3,543	\$3,295
Ecuador	do	5	4,683	4,718
France	do	4	24,227	22,660
Japan	do	2	8,615	8,787
Mexico	do	1	1,750	1,628
New Zealand	do	1	2,550	2,372
Netherlands.....	Dredge	2	15,877	16,194
People's Republic of China	do	1	19,487	18,123
Peru	Naval.....	7	13,374	13,416
Portugal	do	1	1,840	1,877
Republic of China (Taiwan)	do	1	2,850	2,907
Spain	do	2	6,983	6,802
Spain	Floating Drydock	1	5,162	5,265
Turkey	Naval.....	1	3,002	2,792
United Kingdom	do	3	8,353	8,261
United States	do	2	3,060	2,845
United States	Dredge	2	4,535	4,626
Venezuela	Naval.....	2	2,540	2,591
Total.....		39	132,431	\$129,159

Table 4.—Classification of Canal Traffic¹ by Type of Vessel—Fiscal Year 1983

Type of Vessel	Laden		Ballast		Grand Total
	Atlantic to Pacific	Pacific to Atlantic	Atlantic to Pacific	Pacific to Atlantic	
CARGO AND CARGO PASSENGER SHIPS:					
Bulk Carriers:					
Number of transits	1,926	1,365	3,291	424	4,062
Panama Canal net tonnage (thousands)	38,541	26,640	65,181	8,106	83,101
Tolls (thousands of dollars)	\$67,565	\$46,870	\$114,435	\$11,230	\$139,425
Cargo (thousands of long tons)	58,395	22,988	81,383	.....	81,383
Container Cargo Ships:					
Number of transits	783	846	1,629	14	1,657
Panama Canal net tonnage (thousands)	13,319	14,735	28,054	267	28,472
Tolls (thousands of dollars)	\$23,416	\$25,872	\$49,288	\$374	\$49,868
Cargo (thousands of long tons)	7,318	8,737	16,055	.....	16,055
General Cargo Ships:					
Number of transits	928	811	1,739	115	1,922
Panama Canal net tonnage (thousands)	6,727	6,320	13,047	443	14,016
Tolls (thousands of dollars)	\$11,829	\$11,118	\$22,947	\$618	\$24,299
Cargo (thousands of long tons)	5,009	5,002	10,011	.....	10,011
Passenger Ships: ²					
Number of transits	73	75	148	1	149
Panama Canal net tonnage (thousands)	1,119	1,006	2,125	9	2,134
Tolls (thousands of dollars)	\$1,918	\$1,741	\$3,659	\$14	\$3,673
Cargo (thousands of long tons) .....	.....	82	82	.....	82
Refrigerated Cargo Ships:					
Number of transits	401	651	1,052	359	1,466
Panama Canal net tonnage (thousands)	1,983	3,571	5,554	1,969	7,761
Tolls (thousands of dollars)	\$3,472	\$6,303	\$9,775	\$2,766	\$12,869
Cargo (thousands of long tons)	496	1,777	2,273	.....	2,273
Tank Ships:					
Number of transits	703	601	1,304	355	1,965
Panama Canal net tonnage (thousands)	10,194	10,833	21,027	6,332	31,968
Tolls (thousands of dollars)	\$17,983	\$18,992	\$36,975	\$8,804	\$52,242
Cargo (thousands of long tons)	16,087	18,701	34,788	.....	34,788

OTHER TYPE SHIPS:

Naval Vessels:

Number of transits	18	15	33	33
Displacement tonnage (thousands).....	.....	36	87	87
Tolls (thousands of dollars).....	.....	\$36	\$85	\$85
Cargo (thousands of long tons) .....	.....	.....	.....	.....
Barges, Dredges, Drydocks, Tugs, etc.:				
Number of transits	337	46	116	453
Panama Canal net tonnage (thousands)	1,666	213	389	2,055
Displacement tonnage (thousands).....	.....	18	27	45
Tolls (thousands of dollars).....	\$2,936	\$314	\$587	\$3,523
Cargo (thousands of long tons)	999	.....	.....	999

SUMMARY:

Total Cargo and Cargo/ Passenger Ships:

Number of transits	9,163	1,095	963	2,058	11,221
Panama Canal net tonnage (thousands)	134,988	18,834	13,627	32,461	167,449
Tolls (thousands of dollars).....	\$237,079	\$26,336	\$18,961	\$45,297	\$282,376
Cargo (thousands of long tons)	144,592	.....	.....	.....	144,592

Total Other Type Ships:

Number of transits	337	88	61	149	486
Panama Canal net tonnage (thousands)	1,666	213	176	389	2,055
Displacement tonnage (thousands).....	.....	69	63	132	132
Tolls (thousands of dollars).....	\$2,936	\$363	\$309	\$672	\$3,608
Cargo (thousands of long tons)	999	.....	.....	.....	999

Grand Total Ships:

Number of transits	9,500	1,183	1,024	2,207	11,707
Panama Canal net tonnage (thousands)	136,654	19,047	13,803	32,850	169,504
Displacement tonnage (thousands).....	.....	69	63	132	132
Tolls (thousands of dollars).....	\$240,015	\$26,699	\$19,270	\$45,969	\$285,984
Cargo (thousands of long tons)	145,591	.....	.....	.....	145,591

¹Includes only commercial vessels of 300 net tons and over (Panama Canal measurement) for vessels paying tolls on net tonnage basis, or of 500 displacement tons and over for vessels paying on displacement tonnage.

²Vessels certificated for more than 12 passengers.

**Table 5.—Laden and Ballast Traffic by Flag of Vessel
Fiscal Year 1983**

Flag	Laden			Ballast		
	Number of transits	Panama Canal net tonnage	Tolls	Number of transits	Panama Canal net tonnage	Tolls
Australia	15	380,957	\$660,562	.....	.....	.....
Austria	2	45,554	79,720	.....	.....	.....
Bahamas	18	241,216	424,930	2	14,285	\$20,010
Belgium	46	946,743	1,657,890	5	137,295	191,035
Bermuda	5	39,214	68,601	5	71,307	97,369
Bolivia	10	85,110	148,942	.....	.....	.....
Brazil	28	232,378	404,867	4	20,976	27,898
Bulgaria	13	79,614	140,716	3	17,845	25,114
Canada	10	94,107	170,115	6	37,593	54,886
Cayman Islands	4	9,995	18,291	1	721	1,053
Chile	96	1,153,839	2,014,805	16	128,597	181,612
Colombia	126	1,690,531	2,972,889	15	234,014	315,031
Costa Rica	1	947	1,733	2	1,894	2,519
Cuba	131	789,742	1,384,277	22	111,739	152,527
Cyprus	61	448,735	788,393	10	115,662	159,821
Czechoslovakia	1	16,610	27,739	.....	.....	.....
Denmark	220	4,070,045	7,155,150	34	476,251	674,712
Dominican Republic	1	1,392	2,547	1	1,392	2,032
East Germany	6	32,257	53,869	5	26,661	35,459
Ecuador	263	2,252,808	3,974,860	90	745,068	1,051,643
Egypt	1	18,762	31,333	.....	.....	.....
Finland	18	183,584	321,098	3	28,566	39,796
France	73	1,426,303	2,512,349	7	69,969	99,345
Ghana	1	9,841	18,009	1	9,841	14,368
Greece	694	10,476,183	18,447,991	194	3,141,647	4,405,703
Guatemala	2	7,008	11,703	.....	.....	.....
Honduras	31	189,790	339,561	16	86,444	123,380
Hong Kong	5	80,531	144,884	.....	.....	.....
India	18	280,221	492,680	7	139,559	195,874
Indonesia	18	241,636	421,535	.....	.....	.....
Iraq	1	5,914	10,823	1	5,914	7,866
Ireland	4	56,739	99,295	.....	.....	.....
Israel	70	1,413,719	2,483,997	.....	.....	.....
Italy	102	1,226,294	2,144,227	8	67,851	93,855
Japan	920	15,492,296	27,276,983	243	5,557,484	7,807,495
Kuwait	3	36,195	62,389	1	12,094	17,657
Liberia	1,207	21,739,615	38,225,919	348	6,933,777	9,670,253
Malaysia	14	250,961	443,026	1	28,212	37,522
Malta	5	61,741	108,255	3	57,212	79,292
Mexico	38	744,843	1,314,093	31	504,154	714,269
Morocco	3	18,755	34,241	.....	.....	.....
Netherlands	190	1,986,629	3,500,417	47	368,798	525,494
New Zealand	3	108,735	187,387	.....	.....	.....
Nicaragua	5	42,505	75,064	.....	.....	.....
Norway	345	6,558,578	11,520,013	68	1,063,032	1,494,266
Panama	1,364	16,272,688	28,571,641	333	4,038,068	5,614,351
People's Republic of China	81	1,540,413	2,668,095	22	399,063	540,089
Peru	232	2,334,855	4,095,361	33	370,281	519,391
Philippines	141	1,846,152	3,257,594	14	189,310	264,431
Poland	59	391,662	686,984	3	14,407	21,034
Portugal	2	1,890	3,308	.....	.....	.....
Republic of China (Taiwan)	113	2,359,175	4,135,013	8	132,153	188,145
Rumania	1	4,825	8,830	1	4,825	7,044
Saudi Arabia	4	25,057	43,967	3	18,639	27,213
Singapore	173	3,371,127	5,918,777	46	1,106,507	1,556,185
South Africa	3	20,568	37,238	1	2,512	3,341
South Korea	199	3,295,649	5,806,991	21	367,094	504,116
Spain	128	812,531	1,420,613	6	32,481	46,413
Sri Lanka	1	29,301	53,621	.....	.....	.....
Sweden	138	2,931,825	5,155,714	12	139,123	196,544
Switzerland	65	630,056	1,096,582	4	64,389	87,964
Turkey	5	48,821	87,176	3	26,908	39,205
United Arab Emirates	1	8,509	15,571	3	25,421	34,916
United Kingdom	527	8,954,832	15,738,539	93	1,440,238	1,992,649
United States	782	10,551,573	18,352,265	236	3,528,613	4,846,258
U.S.S.R.	375	2,499,598	4,408,235	83	476,875	675,680
Vanuatu	2	4,588	8,396	2	4,588	6,698
Venezuela	24	52,562	89,739	11	13,529	18,708
West Germany	175	2,628,409	4,624,537	18	93,737	131,517
Yugoslavia	75	750,727	1,323,709	12	146,416	199,676
Zaire	2	16,322	27,258	.....	.....	.....
Total	9,500	136,652,887	\$240,013,922	2,168	32,851,031	\$45,840,724

Above table involves only commercial vessels of 300 net tons or over, Panama Canal measurement.

Table 6.—Segregation of Transits¹ by Registered Gross Tonnage—Fiscal Year 1983

Flag	Under 2,000	2,000 to 3,999	4,000 to 5,999	6,000 to 7,999	8,000 to 9,999	10,000 to 14,999	15,000 to 19,999	20,000 to 29,999	30,000 to 39,999	40,000 and over	Total ²	Registered gross tonnage	Average gross tonnage per vessel
Australia.....								10		5	15	460,882	30,725
Austria.....								2			2	53,688	26,844
Bahamas.....				2		7		6			20	303,233	15,162
Belgium.....				2				19	15		51	1,281,913	25,136
Bermuda.....				9						1	10	108,357	10,836
Bolivia.....											10	106,700	10,670
Brazil.....		2				16					32	323,074	10,096
Bulgaria.....		2	8			4		1			16	121,343	7,584
Canada.....	1	4	1	4		2		4			16	158,667	9,917
Cayman Islands.....	2	3									5	11,856	2,371
Chile.....	7	7				23			13		112	1,408,953	12,580
Colombia.....		2	4	9		2		39			141	2,148,547	15,238
Costa Rica.....	3					70					3	2,976	992
Cuba.....	3	63		9		29		6			153	1,063,467	6,951
Cyprus.....	2	8	29	5		6		2		2	71	634,399	8,935
Czechoslovakia.....								1			1	20,596	20,596
Denmark.....	35		6			9		68	101		254	5,863,577	23,085
Dominican Republic.....	2										2	2,380	1,190
East Germany.....			2	9							11	68,959	6,269
Ecuador.....	2	5	32	157		34		12			353	3,537,961	10,023
Egypt.....								1			1	22,606	22,606
Finland.....	6					5		4			21	268,171	12,770
France.....	2					34		18		2	80	1,419,309	17,741
Ghana.....						2					2	26,008	13,004
Greece.....	22		33	24		107		101	148	23	888	15,768,158	17,757
Guatemala.....			2								2	8,256	4,128
Honduras.....	1	1		14		31		2			47	344,957	7,340
Hong Kong.....								2			5	95,332	19,066
India.....						2		6	6	1	25	510,672	20,427
Indonesia.....						4			2		18	292,548	16,253
Iraq.....				2							2	13,952	6,976
Ireland.....											4	68,056	17,014
Israel.....								70			70	1,857,746	26,539
Italy.....			17			41		10	6	1	110	1,591,775	14,471
Japan.....	135	110	39	110	50	193	195	99	217	13	1,161	18,494,869	15,930
Kuwait.....											4	62,257	15,564
Liberia.....	8	16	103	42		231	406	298	310	7	1,555	29,731,447	19,120
Malaysia.....						3		5	4		15	315,464	21,031

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¹Includes only commercial vessels of 300 net tons and over. Panama Canal measurement.

²²Excludes 39 vessels paying tolls on displacement tonnage basis and 16 transits where no registered tonnage was reported.

Table 7.—Principal Commodities Shipped Through Canal by Fiscal Years

	South Atlantic to Pacific		Commodity	North Pacific to Atlantic	
	1981	1982		1982	1981
[Thousands of long tons]					
Canned and Refrigerated Foods	568	574		2,889	3,262
Canned Foods	97	64		171	211
Fish	2	4		43	52
Fruit	15	6		62	80
Milk	61	40		28	38
Other and unclassified	19	14		38	41
Refrigerated Foods	471	510		2,718	3,051
Bananas	3			888	972
Dairy Products	22	14		20	24
Fish	158	147		592	791
Fruit, excluding bananas	118	111		461	418
Meat	10	8		73	156
Other and unclassified	160	230		684	690
Chemicals and Petroleum Chemicals	3,794	3,892		846	984
Caustic soda	823	513		65	46
Chemicals, unclassified	2,225	2,429		671	870
Petroleum chemicals, miscellaneous	746	950		110	68
Coal and Coke (excluding petroleum coke)	18,530	21,249		1,556	1,280
Grains	29,749	33,349		1,675	4,232
Barley	40	34		299	763
Corn	10,703	13,557		1	2
Oats	36	22		1	
Rice	462	62		210	315
Sorghum	2,321	2,013			4
Soybeans	6,734	6,468		10	
Wheat	9,344	11,013		1,084	2,984
Other and unclassified	109	180		70	160
Lumber and Products	628	439		5,335	4,806
Boards and planks	21	11		2,738	2,358
Plywood, veneers, composition board	15	12		981	664
Pulpwood	478	375		1,411	1,527
Other and unclassified	114	41		205	257
					133

851	713	525	Machinery and Equipment.....	1,475	1,538	1,603
101	93	59	Agricultural machinery and implements.....	16	24	20
404	338	243	Automobiles, trucks, accessories and parts.....	1,305	1,343	1,393
180	150	104	Construction machinery and equipment.....	65	56	56
81	65	48	Electrical machinery and apparatus.....	33	45	62
3	4	2	Motorcycles, bicycles, and parts.....	19	24	27
82	63	69	Other and unclassified.....	37	46	45
2,277	1,896	1,632	Manufactures of Iron and Steel.....	3,563	5,178	4,937
261	227	123	Angles, shapes, and sections.....	403	514	644
12	9	10	Nails, tacks, and spikes.....	70	96	61
979	750	950	Plates, sheets, and coils.....	1,277	1,145	1,107
212	148	72	Tubes, pipes, and fittings.....	696	1,842	1,805
383	317	161	Wire, bars, and rods.....	314	299	285
430	445	316	Other and unclassified.....	803	1,282	1,035
246	228	228	Minerals, miscellaneous.....	3,070	3,831	3,392
28	23	20	Asbestos.....	3	4	8
4	2	12	Borax.....	391	426	537
2	3	2	Infusorial earth.....	5	10	23
86	118	122	Salt.....	577	585	294
82	80	61	Soda and sodium compounds.....	149	231	180
44	2	11	Sulfur.....	1,945	2,575	2,350
7,280	6,902	7,950	Nitrates, Phosphates, and Potash.....	1,467	1,553	1,270
528	464	379	Ammonium compounds.....	26	8	50
6	1	1	Fishmeal.....	823	989	678
29	76	27	Nitrate of soda.....	277	208	279
5,123	5,149	5,826	Phosphates.....	143	70	23
93	108	127	Potash.....	142	198	149
1,501	1,104	1,590	Fertilizers, unclassified.....	56	80	91
2,801	2,166	3,391	Ores and Metals.....	4,577	5,676	5,731
1,102	741	750	Ores.....	2,937	4,136	4,288
563	366	375	Alumina/bauxite.....	107	180	532
3	4	.....	Chrome.....	11	50	112
48	29	1	Copper.....	414	730	598
8	23	69	Iron.....	54	262	423
19	35	18	Lead.....	124	149	110
252	184	133	Manganese.....	88	68	101
.....	.....	.....	Tin.....	31	43	49
63	37	397	Zinc.....	468	555	397
146	63	97	Other and unclassified.....	1,640	2,099	1,966

Table 7.—Principal Commodities Shipped Through Canal by Fiscal Years—Continued

Commodity	South Atlantic to Pacific			North Pacific to Atlantic		
	1981	1982	1983	1983	1982	1981
[Thousands of long tons]						
Metals						
Aluminum	292	312	397	57	64	61
Copper	8	4	42	1,162	944	952
Iron	78	22	238	60	100	15
Lead	4	18	14	129	96	62
Scrap	1,191	989	1,846	2	3	4
Tin, including tinplate	61	32	15	21	29	43
Zinc	33	6	13	129	209	139
Other and unclassified	32	42	76	80	95	167
Other Agricultural Commodities	1,568	2,028	1,953	3,491	3,471	3,695
Beans, edible	3	41	56	42	56	68
Cocoa and cacao beans	3	3	3	31	60	47
Coffee, raw and processed	29	20	19	467	451	498
Copra and coconuts	.....	1	.....	14	9	48
Cotton, raw	193	160	28	123	99	93
Molasses	1	11	3	827	878	560
Oilseeds	80	160	91	64	58	124
Peas, dry	1	3	51	36	42	97
Rubber, raw	7	1	.....	61	40	71
Skins and hides	.....	2	.....	3	3	4
Sugar	1,250	1,624	1,701	1,803	1,752	2,040
Wool, raw	1	2	1	20	22	45
Petroleum and Products	11,409	13,691	13,727	20,191	45,324	37,995
Asphalt	70	128	90	6	.....	5
Crude oil	5,154	4,410	4,547	14,123	40,118	31,259
Diesel oil	1,159	1,696	1,277	569	519	808
Fuel oil, residual	984	2,121	3,318	2,800	2,316	3,560
Gasoline	1,586	2,159	1,352	347	304	647
Jet fuel	851	1,264	627	9	14	39
Kerosene	58	108	45	.....	6	2
Liquefied natural gas	333	259	799	28	9	6
Lubricating oil	747	657	524	114	149	152
Petroleum coke	102	162	712	1,624	1,404	1,276

365	727	436	Other and unclassified.	571	485	241
9,618	9,430	9,309	Miscellaneous	7,627	7,760	7,357
45	46	21	Bricks and tile	5	18	18
33	6	4	Carbon black	1	80	30
220	60	64	Cement	7	7	10
359	445	380	Clay, fire and china	28	9	11
48	47	21	Fibers, plant	17	13	17
208	252	242	Flour, wheat	54	35	112
44	50	20	Glass and glassware	11	15	49
37	46	29	Groceries, miscellaneous	37	47	68
42	36	31	Liquors and wines	5	6	9
22	21	25	Marble and stone	1	1	1
1	3	4	Oil, coconut	91	108	202
1	.....	8	Oil, fish	87	176	67
252	311	245	Oil, vegetable	108	230	189
1,080	696	702	Paper and paper products	514	537	610
4	2	1	Porcelainware	3	6	13
237	347	210	Resin	6	7	8
51	24	29	Rubber, manufactured	49	32	44
2	1	34	Seeds, excluding oilseeds	3	22	29
59	19	15	Slag, clinkers, and dross	.....	8	5
42	57	67	Tallow	39	14	2
292	142	48	Textiles	41	43	57
61	59	46	Tobacco and manufactures	3	3	1
16	8	13	Wax, paraffin	3	6	13
6,462	6,752	7,050	All other and unclassified.	6,514	6,337	5,792
89,319	96,557	87,829	Total	57,762	88,895	81,903

Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1983
Segregated by Countries in Principal Trade Areas

	[Long tons]													
	To West Coast United States				To W.C. Canada		To West Coast Central America							
	Alaska	Hawaii	Main-land	Total	Canada	Costa Rica	El Sal- vador	Guate- mala	Mexico	Nica- ragua	Pan- ama	Central America (other) ¹	Bolivia, R.P. ²	Total
EAST COAST NORTH AMERICA:														
United States:														
North Atlantic ports	.....	21,132	273,493	294,625	2,028	.....	121,076	17,371	29,335	10,832	1,495	.....	52,650	232,759
South Atlantic ports	.....	4,445	59,121	63,566	234,945	8,726	240	.....	.....	.....	9,736	16,548	8,153	43,403
Great Lakes ports	.....	.....	.....	.....	.....	.....	15,533	.....	68,094	.....	.....	.....	11,342	94,969
Gulf ports	80	.....	1,135,339	1,135,419	358,958	185,166	326,187	4,813	1,567,612	153,063	34,792	15,609	366,692	2,653,934
United States (other) ¹	.....	26,856	168,523	195,379	.....	.....	142	.....	13	.....	1,250	4,984	62,217	68,606
Total United States	80	52,433	1,636,476	1,688,989	595,931	193,892	463,178	22,184	1,665,054	163,895	47,273	37,141	501,054	3,093,671
EAST COAST CANADA														
.....	.....	.....	11,495	11,495	360	4,043	3,674	.....	25,273	18,993	2,679	3,190	.....	57,852
EAST COAST CENTRAL AMERICA:														
Mexico	.....	.....	27,480	27,480	.....	21,075	311,291	252,112	2,268,881	495,771	.....	1,382	206	3,350,718
Panama	.....	.....	5,868	5,868	.....	.....	.....	.....	.....	.....	499	.....	55,837	56,336
Central America (other) ¹	.....	.....	13,600	13,600	.....	.....	250	.....	.....	.....	.....	715	.....	965
Cristobal, R.P. ²	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	176	.....	.....	184
Total Central America	.....	.....	46,948	46,948	.....	21,075	311,541	252,112	2,268,881	495,779	675	2,097	56,043	3,408,203
EAST COAST SOUTH AMERICA:														
Brazil	.....	.....	327,299	327,299	26,860	.....	.....	.....	52,187	1,838	.....	.....	.....	54,025
Colombia	.....	.....	51,298	51,298	.....	23	13,756	.....	79,409	96	803	.....	3,251	97,338
Venezuela	.....	.....	467,855	467,855	5,642	30,211	306,680	315,117	.....	57,327	4,442	38	74,728	788,543
South America (other) ¹	.....	.....	23,958	23,958	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total South America	.....	.....	870,410	870,410	32,502	30,234	320,436	315,117	131,596	59,261	5,245	38	77,979	939,906
WEST INDIES:														
Cuba	.....	.....	.....	.....	.....	.....	.....	.....	11,285	38,283	984	6,036	89	56,677
Jamaica	.....	.....	191,544	191,544	.....	5,927	.....	.....	.....	.....	.....	.....	.....	5,927
Netherlands West Indies	32,678	85,354	392,469	510,501	3,975	895	19,329	90,666	34,248	45,566	14,354	23,369	238,885	467,312
Trinidad/Tobago	.....	.....	42,642	42,642	.....	575	.....	.....	.....	49	.....	3,015	14,714	18,353
West Indies (other) ¹	31,138	237,733	104,780	373,651	.....	4,060	.....	.....	.....	.....	300	23,098	43,743	71,201
Total West Indies	63,816	323,087	731,435	1,118,338	3,975	11,457	19,329	90,666	45,533	83,898	15,638	55,518	297,431	619,470

EUROPE:													
Belgium	.....	265,645	37,420	38	65,848	.....	11,807	15,108	62	608	394	93,865	.....
France	.....	130,015	19,310	730	4,409	.....	77,732	32,020	184	10	.....	115,085	.....
Italy	.....	89,125	9,812	43	17,303	.....	7,837	6,148	.....	145	.....	31,476	.....
Netherlands	.....	303,597	35,467	6,949	11,719	.....	14,621	33,624	2,491	195	.....	69,599	.....
Norway	.....	143,668	3,591	.....	.....	.....	.....	.....	.....	6,894	.....	6,894	.....
Spain-Portugal	.....	88,993	6,998	1,353	27,984	.....	22,084	4,400	.....	74	533	56,428	.....
Sweden	.....	128,420	5,064	.....	.....	.....	472	10,053	10	.....	.....	10,535	.....
United Kingdom	.....	106,085	13,144	444	.....	.....	7,171	1,370	.....	.....	.....	11,886	.....
U.S.S.R.	.....	16,027	970	.....	9,365	.....	418	87,787	.....	.....	75	97,645	.....
West Germany	.....	377,270	39,244	11,510	15,305	.....	2,775	15,184	4,365	849	10	49,998	.....
Europe (other) ¹	.....	494,119	90,544	649	56,182	.....	29,949	26,752	1,476	7,107	12	122,127	.....
Total Europe	9,418	2,142,964	261,564	21,716	211,016	.....	174,866	232,446	8,588	15,882	1,024	665,538	.....
ASIA (MIDDLE EAST)													
.....	.....	61,252	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
AFRICA													
.....	.....	280,783	10,601	.....	1,083	.....	19,714	11,703	.....	.....	10	32,510	.....
Grand total	73,314	5,781,763	904,943	282,417	1,330,257	680,079	4,330,917	1,065,975	80,098	113,866	933,541	8,817,150	.....
Percent of Pacific-Bound Cargo	0.1	0.4	1.0	0.3	1.5	0.8	4.9	1.2	0.1	0.1	1.1	10.0	.....

See footnotes at end of table.

**Table 8.—Origin and Destination of Commercial Cargo Through the Panama Canal From Atlantic to Pacific During Fiscal Year 1983
Segregated by Countries in Principal Trade Areas—Continued**

	To West Coast South America					To Oceania				
	Chile	Colom- bia	Ecuador	Peru	South America (other) ¹	Total	Australia	French Oceania	New Zealand (other) ¹	Total
EAST COAST NORTH AMERICA:										
United States:										
North Atlantic ports	281,982	15,882	24,879	135,386	3,474	461,603	110,933	17,788	34,575	99,589
South Atlantic ports	38,150	12,066	62,194	23,015	2,730	138,155	96,631	.....	110,301	26,911
Great Lakes ports	1,450	3,352	3,715	21,923	5,590	36,030	.....	.....	.....	.....
Gulf ports	1,245,341	622,397	924,293	1,363,809	81,063	4,236,903	1,296,442	49,250	228,654	36,936
United States (other) ¹	97,391	22,102	48,403	75,141	8,707	251,744	79,701	.....	44,334	76,848
Total United States	1,664,314	675,799	1,063,484	1,619,274	101,564	5,124,435	1,583,707	67,038	417,864	240,284
EAST COAST CANADA										
.....	3,433	37,171	38,510	41,088	13,071	133,273	39,509	.....	15,043	45,119
EAST COAST CENTRAL AMERICA:										
Mexico	5,616	2,214	15,910	27,099	7,615	58,454	1,400	.....	2,415	271
Panama .....	.....	5	1,318	2,282	373	3,978	.....	.....	.....	.....
Central America (other) ¹ .....	.....	2,010	.....	.....	.....	2,010	304	.....	.....	304
Cristobal, R. P. ² .....	.....	.....	612	.....	.....	612	.....	.....	.....	30
Total Central America	5,616	4,229	17,840	29,381	7,988	65,054	1,704	.....	2,415	301
EAST COAST SOUTH AMERICA:										
Brazil .....	.....	35,963	235,817	12,551	3,224	287,555	.....	.....	.....	.....
Colombia	1,910	233,841	2,542	1,085	2,101	241,479	17,676	.....	.....	17,676
Venezuela	1,072,848	29,824	69,876	43,540	31,121	1,247,209	6,909	.....	47,616	60
South America (other) ¹	52,721	17,071	290	4,710	4,499	79,291	.....	.....	.....	.....
Total South America	1,127,479	316,699	308,525	61,886	40,945	1,855,534	24,585	.....	47,616	60
WEST INDIES:										
Cuba .....	.....	2	.....	22,728	44,267	66,997	.....	.....	.....	.....
Jamaica .....	.....	.....	.....	30	6	36	141	.....	.....	34
Netherlands West Indies	606,776	179,970	7,547	66,185	43,701	904,179	.....	12,450	75,474	32
Trinidad/Tobago	5,856	.....	.....	22,619	2,718	31,193	36	40,284	.....	17,547
West Indies (other) ¹	46,055	.....	2,860	8,715	1,359	58,989	29	236	20	186
Total West Indies	658,687	179,972	10,407	120,277	92,051	1,061,394	206	52,970	75,528	17,869
146,571										

EUROPE:												
Belgium.....	60,324	11,022	17,653	40,521	39,041	168,561	6,650	10,498	14,828	13,198	45,174	
France.....	32,886	11,160	2,898	46,060	9,791	102,795	986	143,447	4	15,443	159,880	
Italy.....	19,814	2,747	10,516	5,422	7,859	46,358	315	5,859	1,903	1,269	9,346	
Netherlands.....	41,206	6,009	7,759	17,680	13,053	85,707	39,854	5,071	60,136	26,973	132,034	
Norway.....	1,645	466	411	2,567	.....	5,089	.....	.....	457	.....	457	
Spain-Portugal.....	23,938	7,546	6,699	15,690	8,205	62,078	2,662	897	60	2,933	6,552	
Sweden.....	12,611	2,004	33,821	8,233	1,899	58,568	.....	100	1,210	.....	1,310	
United Kingdom.....	24,815	5,340	9,468	19,172	1,578	60,373	12,718	580	73,111	74,432	160,841	
U.S.S.R.....	.....	.....	320	606	95,490	96,416	.....	.....	16,072	.....	16,072	
West Germany.....	46,558	11,426	67,633	65,959	13,524	205,100	6,863	7,850	23,881	23,976	62,570	
Europe (other) ¹	77,064	53,005	56,478	63,396	51,145	301,088	26,988	50,795	42,863	51,015	171,661	
Total Europe.....	340,861	110,725	213,656	285,306	241,585	1,192,133	97,036	225,097	234,525	209,239	765,897	
ASIA (MIDDLE EAST):												
.....	1,592	.....	.....	.....	.....	1,592	.....	.....	.....	.....	.....
AFRICA												
.....	1,459	1,054	2,466	.....	5,960	10,939	.....	.....	.....	.....	.....
Grand total.....	3,803,441	1,325,649	1,654,888	2,157,212	503,164	9,444,354	1,746,747	345,105	792,991	512,872	3,397,715	
Percent of Pacific-Bound Cargo.....	4.3	1.5	1.9	2.5	0.6	10.8	2.0	0.4	0.9	0.6	3.9	

See footnotes at end of table.

EUROPE:													
Belgium	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
France	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Italy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Netherlands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Norway	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spain-Portugal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sweden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
United Kingdom	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
U.S.S.R.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Germany	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Europe (other) ¹	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total Europe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
ASIA (MIDDLE EAST)													
AFRICA													
Grand total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Percent of Pacific-Bound Cargo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Includes cargo not routed to permit segregation between definite countries.
² Includes both local and transshipped cargo.

ASIA:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</
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See footnotes at end of table.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1982 Segregated by Countries in Principal Trade Areas—Continued

[Long tons]

	To East Coast South America				To West Indies								
	Brazil	Colom- bia	Vene- zuela	South America (other) ¹	Total	Cuba	Haiti/ Domi- can Republic	Jamaica	Nether- lands West Indies	Puerto Rico	Trini- dad/ Tobago	West Indies (other) ¹	Total
WEST COAST NORTH AMERICA:													
United States:													
Alaska.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawaii.....	72,777	11,734	121,530	22,161	228,202	26,803	.....	2,741	441,336	99,431	507	9,862	821,496
Mainland.....	72,777	11,734	121,530	22,161	228,202	26,803	.....	2,741	441,336	99,431	.....	9,862	580,173
Total United States.....	169,156	22,007	45,772	20,627	257,562	71,159	.....	52,094	.....	27,079	2,657	51,929	204,918
WEST COAST CANADA.....													
WEST COAST CENTRAL AMERICA:													
Costa Rica.....	.....	.....	64	.....	64	.....	.....	.....	1,183	.....	48	2,165	3,396
El Salvador.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Guatemala.....	200	.....	.....	.....	200	.....	.....	9,845	.....	.....	.....	.....	9,845
Honduras.....	.....	.....	.....	.....	.....	4,331	3,417	.....	.....	3,677	33,967	2,006	47,398
Mexico.....	698	3,002	23,880	1,706	29,286	1,626	.....	.....	26	.....	456	23	2,131
Nicaragua.....	21	1,114	.....	1,135	1,135	13,725	.....	.....	.....	.....	.....	.....	13,725
Panama.....	.....	5	850	1,170	2,025	1,419	.....	.....	.....	27,666	.....	2,962	32,047
Central America (other) ¹	265	.....	886	953	2,104	35,992	.....	.....	.....	23,328	.....	11	59,331
Balboa, R. P. ².....	.....	.....	500	5,300	5,800	.....	310	580	.....	.....	.....	155	1,045
Total Central America.....	1,184	4,121	26,180	9,129	40,614	55,467	5,353	10,425	1,209	54,671	34,471	7,322	168,918
WEST COAST SOUTH AMERICA:													
Chile.....	.....	5,197	81,401	.....	86,598	3,583	24,959	.....	491	20,992	.....	491	50,516
Colombia.....	.....	857,391	.....	.....	857,391	14,313	.....	.....	.....	1,285	.....	.....	15,598
Ecuador.....	168,257	504,503	3,306	.....	676,066	75,562	.....	.....	476,847	672,430	184,599	129,852	1,539,290
Peru.....	5,186	13,320	53,941	3,369	75,816	89,195	350	3,754	130,343	261,938	.....	52,101	537,681
South America (other) ¹	31	4,263	573	1,086	5,953	46,808	10,197	.....	.....	10,727	.....	.....	67,732
Total South America.....	173,474	1,384,674	139,221	4,455	1,701,824	229,461	35,506	3,754	607,681	967,372	184,599	182,444	2,210,817
OCEANIA:													
Australia.....	.....	.....	10,175	.....	10,175	.....	.....	1,089	154	.....	3,789	2,663	7,695
British Oceania.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
French Oceania.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,328	.....	.....	4,328
New Zealand.....	.....	.....	11,579	.....	11,579	.....	6,202	1,963	150	.....	3,301	3,356	14,972
Oceania (other) ¹.....	.....	.....	143	.....	143	8,808	.....	2,845	271	36,744	4,880	4,595	58,143
Total Oceania.....	.....	.....	21,897	.....	21,897	8,808	6,202	5,897	575	41,072	11,970	10,614	85,138

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1983 Segregated by Countries in Principal Trade Areas—Continued

[Long tons]

	To Europe													
	Belgium	Den- mark	Finland	France	Italy	Neiher- lands	Spain/ Portugal	Sweden	United Kingdom	U.S.S.R.	Yugo- slavia	West Germany	Europe (other) ¹	Total
WEST COAST NORTH AMERICA:														
United States:														
Alaska												4,426		4,426
Hawaii									22,544				24,605	47,149
Mainland	561,974	2,906	86	303,181	271,506	1,676,101	386,524	126,318	182,154	21,060	5,451	251,923	947,271	4,736,455
Total United States	561,974	2,906	86	303,181	271,506	1,676,101	386,524	126,318	204,698	21,060	5,451	256,349	971,876	4,788,030
WEST COAST CANADA														
	386,148	194,116	187,430	197,489	384,786	562,611	34,823	54,536	615,107	469,142	7,036	696,159	1,420,776	5,210,159
WEST COAST CENTRAL AMERICA:														
Costa Rica	543	800		1,481	34,908	5,370	1,083	918	3,662	2,518		9,751	10,498	71,532
El Salvador	842			4,350	2,796	3,067	9,400		1,385	55		60,798	9,759	92,452
Guatemala				5,064	6,760	10,003			10,772	2,281		3,282	6,755	44,917
Honduras					505		9,133					504	3,301	13,443
Mexico	3,101			921	4,309	1,348	69,735	436	1,878	11,505	998	119,391	38,449	252,071
Nicaragua	758	1,700	39	11,549	4,426	32,168	116		2,203	14,413		42,947	54,898	165,217
Panama					51,998	1,083	401			1,748			17,191	72,421
Central America (other) ¹				531	4,303		2,034			8,224	595	1,715	6,388	23,790
Balboa, R.P. ²														
Total Central America	5,244	2,500	39	23,896	110,005	53,039	91,902	1,354	19,900	40,744	1,593	238,388	147,239	735,843
WEST COAST SOUTH AMERICA:														
Chile	170,357	863	31,790	82,987	176,747	248,530	75,451	51,501	119,129	27,218	30,263	446,172	303,773	1,764,781
Colombia	14,402	1	23,810	683	148	25,959	13,640	12	13,116	34,919		115,812	56,225	298,727
Ecuador	46,853	9	49	4,589	52,560	8,703	2,747	17	2,138	38,461	6,296	49,781	116,401	328,604
Peru	190,225	2,186	78,246	56,642	101,729	81,944	23,101	15,118	132,987	34,317	67,643	71,933	200,668	1,056,739
South America (other) ¹	19,596			39,615	16,233	58,310	16,254		9,869	318,799	6,980	35,130	46,468	567,254
Total South America	441,433	3,059	133,895	184,516	347,417	423,446	131,193	66,648	277,239	453,714	111,182	718,828	723,535	4,016,105
OCEANIA:														
Australia	1,530		15,253	3,999	262	6,326			7,001			68,264	5,872	108,507
British Oceania				34,256	19,282		1,650		137,512					192,700
French Oceania	23,780			62,350	10,750		20		18,100				15,630	130,630
New Zealand	21,630				110	6,606		6,758	85,610	10,302		8,220	55,288	194,524
Oceania (other) ¹	14,412				549	6,802			143,584	8,503		12,236	75,011	261,097
Total Oceania	61,352		15,253	100,605	30,953	19,734	1,670	6,758	391,807	18,805		88,720	151,801	887,458
ASIA:														
China (Mainland)														
China (Taiwan)				620	9		143						2,342	3,114
Hong Kong				1,435	130		89						452	2,106
Indonesia													22,800	22,800
Japan	33,009	428		3,166	48	33,828	592	747	6,397			704	1,014	79,933
Philippine Islands				47	846	9,853	2,020					8,833	47	21,646
Singapore													168	168
South Korea						1,880	277							2,157
Thailand														
U.S.S.R.										18,271				18,271
Asia (other) ¹				5,634	165		20						4,549	10,368
Total Asia	33,009	428		10,902	1,198	45,561	3,141	747	6,397	18,271		9,537	31,372	160,563
Grand total	1,489,160	203,009	336,703	820,589	1,145,865	2,780,492	649,253	256,361	1,515,148	1,021,736	125,262	2,007,981	3,446,599	15,798,158
Percent of Atlantic-Bound Cargo	2.6	0.4	0.6	1.4	2.0	4.8	1.1	0.4	2.6	1.8	0.2	3.5	6.0	27.4

See footnotes at end of table.

Table 9.—Origin and Destination of Commercial Cargo Through the Panama Canal From Pacific to Atlantic During Fiscal Year 1983 Segregated by Countries in Principal Trade Areas—Continued

	[Long tons]									Percent of total Atlantic- bound cargo
	To Asia (Middle East)		To Africa							
	Asia (Middle East)	Algeria	Egypt	Morocco	South Africa	Tunisia	Africa (other) ¹	Total		
WEST COAST NORTH AMERICA:										
United States:										
Alaska .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.6
Hawaii .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.5
Mainland	31,455	26,573	532,709	91,714	.....	62,812	7,204	721,012	9,494,663	16.4
Total United States	31,455	26,573	532,709	91,714	.....	62,812	11,218	725,026	14,706,537	25.5
WEST COAST CANADA										
	124,652	319,538	62,636	367,834	142,468	335,171	8,214	1,235,861	8,695,862	15.0
WEST COAST CENTRAL AMERICA:										
Costa Rica	3,182	.....	.....	.....	.....	.....	.....	.....	179,711	0.3
El Salvador	1,202	.....	5,050	.....	.....	.....	.....	5,050	233,362	0.4
Guatemala .....	.....	.....	.....	.....	.....	.....	.....	.....	182,987	0.3
Honduras .....	.....	.....	.....	.....	21	.....	3,656	3,677	81,490	0.1
Mexico	15,200	70,609	.....	.....	.....	.....	133	70,742	718,448	1.3
Nicaragua	12,451	20,304	.....	.....	.....	.....	.....	20,304	268,855	0.5
Panama	23,995	.....	.....	.....	.....	.....	568	568	389,287	0.7
Central America (other) ¹	85	2,953	.....	.....	752	.....	.....	3,705	119,961	0.2
Balboa, R.P. ² .....	.....	.....	.....	.....	.....	.....	.....	.....	11,808	.....
Total Central America	56,115	93,866	5,050	.....	773	.....	4,357	104,046	2,185,909	3.8
WEST COAST SOUTH AMERICA:										
Chile	2,666	.....	.....	.....	22,732	6,505	3,404	32,641	3,401,435	5.9
Colombia .....	.....	.....	.....	.....	.....	11,811	.....	11,812	1,503,732	2.6
Ecuador	12,142	.....	.....	.....	.....	.....	.....	.....	7,056,094	12.2
Peru .....	.....	.....	150	.....	6,888	4,216	12,733	23,987	4,063,151	7.0
South America (other) ¹ .....	.....	.....	.....	.....	.....	.....	17,989	17,989	723,998	1.3
Total South America	14,808	.....	150	.....	29,620	22,532	34,127	86,429	16,748,410	29.0
OCEANIA:										
Australia .....	.....	.....	.....	.....	.....	.....	.....	.....	1,573,952	2.7
British Oceania .....	.....	.....	.....	.....	.....	.....	.....	.....	270,468	0.5
French Oceania .....	.....	.....	.....	.....	.....	.....	.....	.....	144,107	0.3
New Zealand .....	.....	5,999	.....	.....	.....	.....	.....	5,999	479,438	0.8
Oceania (other) ¹ .....	.....	.....	.....	.....	.....	.....	.....	.....	637,762	1.1
Total Oceania .....	.....	5,999	.....	.....	.....	.....	.....	5,999	3,105,727	5.4

[Long tons]

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST UNITED STATES TO WEST COAST			
UNITED STATES:			
Canned and refrigerated foods, miscellaneous	1	1	.....
Chemicals and petroleum chemicals	309	371	560
Caustic soda	127	154	210
Chemicals, unclassified	54	92	156
Petroleum chemicals, miscellaneous	128	125	194
Machinery and equipment, miscellaneous	8	.....	4
Manufactures of iron and steel .....	.....	7	27
Plates, sheets, and coils .....	.....	7	14
Other and unclassified .....	.....	.....	13
Nitrates, phosphates, and potash	76	135	119
Ammonium compounds	49	.....	10
Fertilizers, unclassified .....	.....	.....	55
Phosphates	27	135	54
Ores and metals	30	90	254
Ore, alumina/bauxite	30	90	254
Petroleum and products	800	1,450	1,461
Crude oil .....	.....	65	58
Fuel oil, residual	381	159	75
Gasoline	87	494	757
Jet fuel	45	160	108
Kerosene .....	.....	11	5
Lubricating oil	186	346	330
Other and unclassified	101	215	128
Miscellaneous	413	334	278
All other and unclassified	413	334	278
Total	1,637	2,388	2,703
EAST COAST UNITED STATES TO WEST COAST			
CANADA:			
Nitrates, phosphates, and potash	569	601	844
Phosphates	569	601	844
Miscellaneous	27	.....	32
Clay, fire and china .....	.....	.....	29
All other and unclassified	27	.....	3
Total	596	601	876
EAST COAST UNITED STATES TO WEST COAST			
CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	20	13	16
Coal	88	505	277
Grains	1,924	793	1,408
Corn	860	140	552
Sorghum	379	242	235
Soybeans	461	151	416
Wheat	219	241	199
Other and unclassified	5	19	6
Lumber and products, miscellaneous	2	5	3
Machinery and equipment, miscellaneous	3	3	8
Manufactures of iron and steel, miscellaneous	5	3	1
Minerals, miscellaneous	1	4	11
Borax	1	.....	1
Soda and sodium compounds .....	.....	4	5
Sulfur .....	.....	.....	5

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST UNITED STATES TO WEST COAST			
CENTRAL AMERICA—Continued			
Nitrates, phosphates, and potash	334	459	621
Ammonium compounds	117	25	79
Fertilizers, unclassified	121	214	376
Phosphates	71	204	164
Potash	25	16	2
Ores and metals .....	.....	2	11
Metals, miscellaneous .....	.....	.....	8
Ores, miscellaneous .....	.....	2	3
Other agricultural commodities	77	164	136
Oilseeds	55	136	13
Sugar	22	28	123
Petroleum and products	54	33	42
Diesel oil	2	22	.....
Gasoline	2	1	1
Fuel oil, residual	45	.....	18
Lubricating oil	5	10	23
Miscellaneous	85	83	61
Flour, wheat	2	3	11
Paper and paper products	30	18	27
Tallow	10	4	.....
All other and unclassified	43	58	23
Total	<u>2,593</u>	<u>2,067</u>	<u>2,595</u>
EAST COAST UNITED STATES TO WEST COAST			
SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	29	16	29
Chemicals and petroleum chemicals	186	171	215
Caustic soda	45	33	64
Chemicals, unclassified	134	125	119
Petroleum chemicals, miscellaneous	7	13	32
Coal and coke	227	100	347
Grains	3,100	3,231	2,723
Corn	619	824	771
Oats	7	15	21
Rice	20	7	128
Sorghum	122	75	11
Soybeans	162	146	55
Wheat	2,165	2,156	1,730
Other and unclassified	5	8	7
Lumber and products	15	15	18
Pulpwood	13	10	10
Other and unclassified	2	5	8
Machinery and equipment	67	139	253
Agricultural machinery and implements	19	29	45
Automobiles, trucks, accessories and parts	22	55	111
Construction machinery and equipment	13	29	48
Electrical machinery and apparatus	6	13	23
Other and unclassified	7	13	26
Manufactures of iron and steel	30	104	148
Angles, shapes, and sections	9	6	20
Plates, sheets, and coils	4	8	11
Tubes, pipes, and fittings	7	16	23
Wire, bars, and rods	8	61	67
Other and unclassified	2	13	27

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST UNITED STATES TO WEST COAST			
SOUTH AMERICA—Continued			
Minerals, miscellaneous	23	34	41
Soda and sodium compounds	18	27	33
Sulfur	2	1	.....
Other and unclassified	3	6	8
Nitrates, phosphates, and potash	282	236	432
Ammonium compounds	8	17	34
Fertilizers, unclassified	150	109	167
Fishmeal .....	.....	.....	5
Phosphates	111	96	184
Potash	13	14	42
Ores and metals	46	51	75
Ores, miscellaneous	7	14	17
Metals	39	37	58
Scrap	30	26	30
Tin, including tinplate	3	4	11
Other and unclassified	6	7	17
Other agricultural commodities	10	12	188
Oilseeds	5	10	17
Sugar	2	.....	167
Other and unclassified	3	2	4
Petroleum and products	439	170	59
Diesel oil	130	53	1
Gasoline	134	14	1
Jet fuel	12	.....	.....
Liquefied natural gas	54	20	.....
Lubricating oil	37	41	54
Residual fuel oil	29	40	.....
Other and unclassified	43	2	3
Miscellaneous	670	721	743
Bricks and tile	3	6	8
Carbon black	1	1	2
Clay, fire and china	10	12	15
Flour, wheat	59	56	39
Groceries, miscellaneous	7	15	14
Oil, coconut	4	2	1
Oil, vegetable	127	104	85
Paper and paper products	99	135	140
Resin	33	37	58
Rubber, manufactured	7	7	17
Tallow	49	34	37
Textiles	8	10	20
All other and unclassified	263	302	307
Total	5,124	5,000	5,271
EAST COAST UNITED STATES TO BALBOA, R.P.:			
Canned and refrigerated foods, miscellaneous	8	8	4
Grains	93	92	90
Corn	35	37	38
Wheat	48	55	51
Other and unclassified	10	.....	1
Machinery and equipment, miscellaneous	4	1	3
Ores and metals, miscellaneous	4	6	11
Petroleum and products	248	68	23
Diesel .....	.....	35	20
Fuel oil, residual	237	28	.....
Other and unclassified	11	5	3

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST UNITED STATES TO BALBOA, R.P.—Continued			
Miscellaneous	144	128	101
Oil, vegetable	14	18	15
All other and unclassified	130	110	86
Total	501	303	232
EAST COAST UNITED STATES TO HAWAII:			
Petroleum and products .....	.....	.....	41
Jet fuel .....	.....	.....	29
Other and unclassified .....	.....	.....	12
Miscellaneous	53	52	51
All other and unclassified	53	52	51
Total	53	52	92
EAST COAST UNITED STATES TO OCEANIA:			
Chemicals and petroleum chemicals	570	427	602
Caustic soda	390	274	458
Chemicals, unclassified	172	117	113
Petroleum chemicals, miscellaneous	8	36	31
Coal and coke	30	21	33
Grains	116	27	44
Rice	1	1	.....
Soybeans	105	14	43
Other and unclassified	10	12	1
Lumber and products .....	.....	5	2
Pulpwood .....	.....	5	2
Machinery and equipment	12	22	13
Agricultural machinery and implements	2	10	4
Automobiles, trucks, accessories and parts	1	2	1
Construction machinery and equipment	6	7	6
Electrical machinery and apparatus	1	1	.....
Other and unclassified	2	2	2
Manufactures of iron and steel, miscellaneous	3	3	4
Minerals, miscellaneous	1	.....	.....
Nitrates, phosphates, and potash	710	488	471
Ammonium compounds	8	21	21
Fertilizers, unclassified	184	104	91
Phosphates	513	358	323
Potash	5	5	36
Ores and metals, miscellaneous .....	.....	.....	7
Petroleum and products	293	159	188
Liquefied gas	21	25	57
Lubricating oil	8	30	34
Residual fuel oil	144	.....	.....
Petroleum coke	101	68	43
Other and unclassified	19	36	54
Miscellaneous	574	800	772
Clay, fire and china	11	24	21
Glass and glassware	2	4	2
Oil, vegetable	3	39	21
Paper and paper products	35	25	8
Resin	19	9	9
Rubber, manufactured	1	4	4
Textiles .....	.....	1	1
All other and unclassified	503	694	706
Total	2,309	1,952	2,136

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST UNITED STATES TO ASIA:			
Canned and refrigerated foods	189	215	215
Canned foods, miscellaneous	7	7	4
Refrigerated foods	182	208	211
Fruit	89	107	113
Meat	2	.....	1
Other and unclassified	91	101	97
Chemicals and petroleum chemicals	2,257	2,212	1,708
Caustic soda	56	2	31
Chemicals, unclassified	1,494	1,498	1,219
Petroleum chemicals, miscellaneous	707	712	458
Coal and coke	8,729	20,484	17,818
Grains	29,326	28,896	24,851
Barley	104	.....	.....
Corn	20,103	12,515	9,320
Oats .....	.....	.....	3
Rice	25	50	329
Sorghum	834	1,650	2,044
Soybeans	6,264	6,074	5,932
Wheat	1,955	8,477	7,167
Other and unclassified	41	130	56
Lumber and products	281	196	292
Pulpwood	258	174	229
Other and unclassified	23	22	63
Machinery and equipment	67	67	110
Agricultural machinery and implements	6	11	13
Automobiles, trucks, accessories and parts	7	8	18
Construction machinery and equipment	23	23	36
Electrical machinery and apparatus	11	10	26
Other and unclassified	20	15	17
Manufactures of iron and steel	96	162	295
Angles, shapes, and sections	33	30	12
Plates, sheets, and coils	8	19	31
Tubes, pipes, and fittings	21	21	48
Wires, bars, and rods	4	16	44
Other and unclassified	30	76	160
Minerals, miscellaneous	1	1	1
Nitrates, phosphates, and potash	4,961	3,981	3,941
Ammonium compounds	47	40	5
Fertilizers, unclassified	401	232	399
Fishmeal .....	.....	.....	1
Phosphates	4,477	3,659	3,533
Potash	36	50	3
Ores and metals	1,810	1,015	1,171
Ores, miscellaneous	25	12	24
Metals	1,785	1,003	1,147
Aluminum	26	2	25
Iron	69	.....	4
Scrap	1,654	964	1,089
Tin, including tinplate	3	11	22
Other and unclassified	33	26	7
Other agricultural commodities	59	201	185
Beans, edible	34	30	2
Cotton, raw	23	152	170
Other and unclassified	2	19	13

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST UNITED STATES TO ASIA—Continued			
Petroleum and products	1,234	709	230
Gasoline	18	31	.....
Liquefied gas	360	100	85
Lubricating oil	58	66	57
Petroleum coke	590	61	58
Diesel	24	136	.....
Residual fuel oil	145	217	.....
Jet fuel	29	31	.....
Other and unclassified	10	67	30
Miscellaneous	4,039	4,115	4,243
Bricks and tile	1	3	4
Carbon black .....	.....	2	25
Clay, fire and china	323	380	278
Fibers, plant	15	39	43
Flour, wheat	103	150	144
Groceries, miscellaneous	7	14	11
Marble and stone	11	12	11
Oil, vegetable	47	115	93
Paper and paper products	243	208	540
Resin	106	240	127
Rubber, manufactured	5	1	8
Tallow	6	17	4
Textiles	17	113	241
Tobacco and manufactures	45	53	54
All other and unclassified	3,110	2,768	2,660
Total	53,049	62,254	55,060
EAST COAST CANADA TO WEST COAST UNITED STATES:			
Manufactures of iron and steel, miscellaneous .....	.....	.....	7
Petroleum and products .....	.....	26	.....
Gasoline .....	.....	26	.....
Miscellaneous	11	12	6
Pulpwood	2	5	.....
All other and unclassified	9	7	6
Total	11	38	13
EAST COAST CANADA TO WEST COAST CENTRAL AMERICA:			
Manufactures of iron and steel, miscellaneous	1	8	27
Miscellaneous	57	19	26
Paper and paper products	10	10	16
All other and unclassified	47	9	10
Total	58	27	53
EAST COAST CANADA TO WEST COAST SOUTH AMERICA:			
Grains	8	7	8
Barley	5	.....	6
Other and unclassified	3	7	2
Machinery and equipment, miscellaneous	5	4	8
Manufactures of iron and steel, miscellaneous	17	20	44
Minerals, miscellaneous	13	13	45
Asbestos	13	13	18
Sulfur .....	.....	.....	27
Ores and metals	1	3	4
Metals	1	3	4
Tin, including tinplate .....	.....	1	1
Other and unclassified	1	2	3

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST CANADA TO WEST COAST			
SOUTH AMERICA—Continued			
Miscellaneous	89	94	85
Paper and paper products	45	54	50
All other and unclassified	44	40	35
Total	133	141	194
EAST COAST CANADA TO OCEANIA:			
Miscellaneous	100	184	200
Paper and paper products .....	.....	17	46
All other and unclassified	100	167	154
Total	100	184	200
EAST COAST CANADA TO ASIA:			
Canned and refrigerated foods	49	60	71
Refrigerated foods	49	60	71
Fish	31	39	52
Other and unclassified	18	21	19
Chemicals and petroleum chemicals, miscellaneous	4	2	.....
Grains	88	145	439
Barley .....	.....	8	25
Corn .....	.....	20	14
Soybeans	45	60	218
Wheat	43	43	129
Other and unclassified .....	.....	14	53
Lumber and products	146	120	184
Pulpwood	144	120	154
Other and unclassified	2	.....	30
Machinery and equipment, miscellaneous .....	.....	2	3
Manufactures of iron and steel, miscellaneous	58	37	88
Minerals, miscellaneous .....	.....	.....	1
Asbestos .....	.....	.....	1
Ores and metals	550	203	160
Ores, miscellaneous	108	74	82
Metals	442	129	78
Aluminum	142	119	2
Iron	87	10	13
Scrap	160	.....	37
Other and unclassified	53	.....	26
Other agricultural commodities .....	.....	.....	35
Oilseeds .....	.....	.....	35
Petroleum and products .....	.....	.....	13
Other and unclassified .....	.....	.....	13
Miscellaneous	674	650	586
Paper and paper products	105	89	107
Resin	26	36	19
Slag	15	19	17
All other and unclassified	528	506	443
Total	1,569	1,219	1,580
EAST COAST CENTRAL AMERICA TO WEST COAST UNITED STATES:			
Nitrates, phosphates, and potash	28	29	.....
Amonium compounds	15	29	.....
Fertilizers, unclassified	13	.....	.....

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST CENTRAL AMERICA TO WEST COAST			
UNITED STATES—Continued			
Petroleum and products .....	.....	106	13
Liquefied gas .....	.....	.....	13
Residual fuel oil .....	.....	106	.....
Miscellaneous	19	.....	18
All other and unclassified	19	.....	18
Total	47	135	31
EAST COAST CENTRAL AMERICA TO WEST COAST CENTRAL AMERICA:			
Minerals, miscellaneous .....	.....	.....	5
Sulfur .....	.....	.....	5
Nitrates, phosphates, and potash	102	101	31
Ammonium compounds .....	.....	38	31
Phosphates .....	.....	21	.....
Fertilizers	102	42	.....
Petroleum and products	3,247	2,199	1,344
Crude oil	1,378	875	742
Diesel oil	139	159	1
Liquefied gas	198	5	41
Fuel oil, residual	1,396	908	496
Gasoline .....	.....	4	21
Other and unclassified	136	248	43
Miscellaneous	3	6	2
All other and unclassified	3	6	2
Total	3,352	2,306	1,382
EAST COAST CENTRAL AMERICA TO WEST COAST SOUTH AMERICA:			
Nitrates, phosphates, and potash	20	.....	.....
Fertilizers, miscellaneous	20	.....	.....
Other agricultural commodities .....	.....	10	5
Sugar .....	.....	10	5
Petroleum and products	5	17	41
Other and unclassified	5	17	41
Miscellaneous	39	42	45
Cement .....	.....	.....	7
All other and unclassified	39	42	38
Total	64	69	91
EAST COAST CENTRAL AMERICA TO BALBOA, R.P.:			
Petroleum and products	56	99	180
Diesel oil	33	62	59
Fuel, oil, residual	23	30	106
Gasoline .....	.....	.....	4
Other and unclassified .....	.....	7	11
Total	56	99	180
EAST COAST CENTRAL AMERICA TO OCEANIA:			
Miscellaneous	4	6	13
All other and unclassified	4	6	13
Total	4	6	13

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST CENTRAL AMERICA TO ASIA:			
Chemicals and petroleum chemicals	10	24	54
Nitrates, phosphates, and potash	10	7	18
Phosphates .....	.....	2	2
Fertilizers, miscellaneous	10	5	16
Ores and metals, miscellaneous	61	73	94
Other agricultural commodities	11	10	7
Coffee	11	10	7
Petroleum and products	56	.....	31
Crude petroleum	56	.....	.....
Diesel oil .....	.....	.....	30
Other and unclassified .....	.....	.....	1
Miscellaneous	76	38	17
All other and unclassified	76	38	17
Total	224	152	221
EAST COAST SOUTH AMERICA TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	2	.....	2
Chemicals and petroleum chemicals	90	3	.....
Lumber and products, miscellaneous	24	2	16
Manufactures of iron and steel, miscellaneous	181	54	36
Ores and metals	44	19	44
Ores	44	19	44
Alumina/bauxite	24	19	17
Manganese .....	.....	.....	3
Other and unclassified	20	.....	24
Other agricultural commodities	11	5	10
Cocoa and cacao beans	1	1	.....
Coffee	5	4	10
Sugar, raw	5	.....	.....
Petroleum and products	480	295	162
Asphalt	56	64	40
Crude oil	258	48	64
Diesel oil	29	.....	.....
Fuel oil, residual	50	.....	.....
Gasoline	87	48	.....
Jet fuel .....	.....	90	58
Kerosene .....	.....	45	.....
Miscellaneous	38	30	27
Paper and products	23	7	14
All other and unclassified	15	23	13
Total	870	408	297
EAST COAST SOUTH AMERICA TO WEST COAST CANADA:			
Manufactures of iron and steel	33	20	11
Miscellaneous .....	.....	17	10
All other and unclassified .....	.....	17	10
Total	33	37	21
EAST COAST SOUTH AMERICA TO WEST COAST CENTRAL AMERICA:			
Coal	79	79	53
Grains .....	.....	62	.....
Sorghum .....	.....	38	.....
Soybeans .....	.....	19	.....
Other and unclassified .....	.....	5	.....

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1983	1982	1981
EAST COAST SOUTH AMERICA TO WEST COAST			
CENTRAL AMERICA—Continued			
Nitrates, phosphates, and potash	55	4	20
Fertilizers, miscellaneous	55	4	20
Petroleum and products	669	818	1,135
Crude oil	667	754	1,116
Liquefied gas	2	3	19
Other and unclassified .....	.....	61	.....
Other agricultural commodities	52	28	51
Sugar	52	28	50
Other and unclassified .....	.....	.....	1
Miscellaneous	7	23	14
All other and unclassified	7	23	14
Total	862	1,014	1,273
EAST COAST SOUTH AMERICA TO WEST COAST SOUTH AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	12	25	7
Grains	2	.....	.....
Oats	2	.....	.....
Minerals, miscellaneous .....	.....	3	12
Salt .....	.....	3	11
Soda and sodium compounds .....	.....	.....	1
Nitrates, phosphates, and potash	62	22	10
Fertilizers, unclassified	62	22	10
Ores and metals	26	15	15
Ore, alumina/bauxite	14	9	5
Metals, miscellaneous	12	6	10
Other agricultural commodities	18	10	13
Sugar	13	.....	12
Other and unclassified	5	10	1
Petroleum and products	1,654	1,643	1,800
Crude oil	1,116	1,165	1,376
Diesel oil	168	198	96
Fuel oil, residual	112	104	110
Gasoline	180	96	24
Jet fuel	18	.....	4
Liquefied gas	4	59	31
Lubricating oil	44	21	90
Other and unclassified	12	.....	73
Miscellaneous	82	127	47
All other unclassified	82	127	47
Total	1,856	1,845	1,904
EAST COAST SOUTH AMERICA TO BALBOA, R.P.:			
Petroleum and products	74	46	134
Diesel oil	19	.....	44
Gasoline	8	16	.....
Fuel oil, residual	47	30	69
Other and unclassified .....	.....	.....	21
Miscellaneous	4	1	6
All other and unclassified	4	1	6
Total	78	47	140

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EAST COAST SOUTH AMERICA TO HAWAII:			
Petroleum and products .....	.....	27	25
Jet fuel .....	.....	27	25
Nitrates, phosphates, and potash .....	.....	11	.....
Fertilizers, unclassified .....	.....	11	.....
Total .....	.....	38	25
EAST COAST SOUTH AMERICA TO OCEANIA:			
Petroleum and products	25	.....	1
Miscellaneous	47	9	1
All other and unclassified	47	9	1
Total	72	9	2
EAST COAST SOUTH AMERICA TO ASIA:			
Canned and refrigerated foods, miscellaneous	19	15	17
Chemicals and petroleum chemicals, miscellaneous	38	153	113
Grains, miscellaneous .....	.....	.....	76
Lumber and products, miscellaneous	29	11	16
Manufactures of iron and steel, miscellaneous	143	28	148
Nitrates, phosphates and potash	2	19	30
Fertilizers, miscellaneous	2	19	30
Ores and metals	323	284	331
Ores	103	107	136
Alumina/bauxite	16	23	13
Copper .....	.....	13	.....
Manganese	74	64	119
Other and unclassified	13	7	4
Metals, miscellaneous	220	177	195
Other agricultural commodities	4	7	20
Cotton, raw	2	5	18
Sugar .....	.....	.....	.....
Other and unclassified	2	2	2
Petroleum and products	1,093	1,660	1,671
Crude oil	846	1,360	1,481
Diesel oil	61	119	84
Gasoline	53	46	28
Jet fuel	30	87	59
Liquefied gas	8	.....	.....
Residual fuel oil	48	38	.....
Other and unclassified	47	10	19
Miscellaneous	32	31	53
Paper and products .....	.....	.....	16
All other and unclassified	32	31	37
Total	1,683	2,208	2,475
WEST INDIES TO WEST COAST UNITED STATES:			
Chemicals and petroleum chemicals, miscellaneous ....	.....	24	.....
Minerals, miscellaneous	24	.....	31
Salt	24	.....	31
Ores and metals	284	159	218
Ore, alumina/bauxite	251	159	184
Metals, miscellaneous	33	.....	34

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST INDIES TO WEST COAST UNITED STATES—Continued			
Petroleum and products	487	568	379
Asphalt	31	5	17
Diesel oil .....	.....	.....	25
Fuel oil, residual	287	81	.....
Gasoline	58	355	198
Jet fuel	64	122	136
Lubricating oil	47	5	3
Miscellaneous .....	.....	1	19
All other and unclassified .....	.....	1	19
Total	795	752	647
WEST INDIES TO WEST COAST CANADA:			
Machinery and equipment .....	.....	0	.....
Electrical machinery and apparatus .....	.....	6	.....
Ores and metals	4	6	52
Ore, alumina/bauxite	4	6	52
Petroleum and products .....	.....	.....	25
Jet fuel .....	.....	.....	25
Total	4	12	77
WEST INDIES TO WEST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	1	2	3
Other agricultural commodities	11	13	10
Sugar	11	13	10
Petroleum and products	265	675	254
Crude oil	34	43	83
Diesel oil	97	267	61
Fuel oil, residual	7	189	22
Gasoline	78	140	37
Lubricating oil	4	4	7
Other and unclassified	45	32	44
Miscellaneous	45	38	28
Cement	6	18	15
All other and unclassified	39	20	13
Total	322	728	295
WEST INDIES TO WEST COAST SOUTH AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	3	5	13
Other agricultural commodities	47	.....	.....
Minerals, miscellaneous	9	.....	6
Sulfur	9	.....	6
Ores and metals .....	.....	1	32
Ores, miscellaneous .....	.....	1	32
Petroleum and products	975	1,453	1,052
Crude oil	45	52	.....
Diesel oil	363	471	497
Fuel oil, residual	53	25	12
Gasoline	379	729	443
Jet fuel	28	36	13
Kerosene	26	40	25
Liquefied gas	7	8	5
Lubricating oil	56	77	41
Other and unclassified	18	15	16
Miscellaneous	27	20	14
All other and unclassified	27	20	14
Total	1,061	1,479	1,117

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1983	1982	1981
WEST INDIES TO BALBOA, R.P.:			
Petroleum and products	297	182	299
Crude oil .....	.....	.....	84
Diesel oil	110	59	104
Fuel oil, residual	117	102	71
Gasoline	65	15	2
Other and unclassified	5	6	38
Miscellaneous .....	.....	13	40
All other and unclassified .....	.....	13	40
Total	297	195	339
WEST INDIES TO HAWAII:			
Petroleum and products	323	388	253
Diesel oil	16	.....	29
Jet fuel	297	388	224
Residual fuel oil	10	.....	.....
Total	323	388	253
WEST INDIES TO OCEANIA:			
Minerals, miscellaneous	44	97	35
Salt	44	97	35
Other agricultural commodities .....	.....	15	.....
Sugar .....	.....	15	.....
Petroleum and products	99	69	53
Diesel oil	16	4	22
Gasoline	48	6	.....
Jet fuel	28	54	24
Lubricating oil .....	.....	5	7
Other and unclassified	7	.....	.....
Miscellaneous	4	14	7
All other and unclassified	4	14	7
Total	147	195	95
WEST INDIES TO ASIA:			
Canned and refrigerated foods	14	21	8
Fish, refrigerated	7	21	4
Other and unclassified	7	.....	4
Chemicals and petroleum chemicals, miscellaneous	49	17	6
Ores and metals	46	48	42
Ores	39	43	37
Alumina/bauxite	39	36	32
Other and unclassified .....	.....	7	5
Metals, miscellaneous	7	5	5
Other agricultural commodities	1,394	1,466	867
Sugar	1,393	1,464	864
Other and unclassified	1	2	3
Petroleum and products	439	374	182
Diesel oil .....	.....	36	.....
Liquefied gas	86	.....	7
Gasoline	78	7	7
Jet fuel	71	246	102
Fuel oil, residual	138	58	.....
Lubricating oil	66	27	66
Miscellaneous	34	15	16
All other and unclassified	34	15	16
Total	1,976	1,941	1,121

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EUROPE TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	39	36	27
Chemicals and petroleum chemicals	24	15	82
Caustic soda	2	7	19
Chemicals, unclassified	22	8	63
Lumber and products, miscellaneous	17	15	15
Machinery and equipment	150	152	134
Automobiles, trucks, accessories and parts	138	148	130
Construction machinery and equipment	4	1	2
Electrical machinery and apparatus	5	.....	1
Other and unclassified	3	3	1
Manufactures of iron and steel	610	732	664
Angles, shapes, and sections	34	88	162
Plates, sheets, and coils	379	308	392
Tubes, pipes, and fittings	14	28	21
Wires, bars, and rods	41	104	34
Other and unclassified	142	204	55
Nitrates, phosphates, and potash	244	317	245
Ammonium compounds	63	163	156
Fertilizers, unclassified	159	78	64
Nitrate of soda	22	76	24
Other and unclassified .....	.....	.....	1
Ores and metals	92	14	35
Ores, miscellaneous	20	1	5
Metals	72	13	30
Iron	63	1	23
Other and unclassified	9	12	7
Petroleum and products	23	94	7
Other and unclassified	23	94	7
Miscellaneous	953	833	876
Bricks and tile	8	12	13
Cement	35	.....	88
Glass and glassware	2	1	1
Liquors and wines	8	2	6
Marble and stone	2	6	6
Paper and paper products	57	42	40
Rubber, manufactured .....	.....	1	1
All other and unclassified	841	769	721
Total	2,152	2,208	2,085
EUROPE TO WEST COAST CANADA:			
Canned and refrigerated foods, miscellaneous	5	5	5
Chemicals and petroleum chemicals, miscellaneous .....	.....	.....	15
Machinery and equipment	14	9	15
Automobiles, trucks, accessories and parts	5	8	9
Other and unclassified	9	1	6
Manufactures of iron and steel	68	209	277
Angles, shapes, and sections	7	38	30
Plates, sheets, and coils	27	84	170
Tubes, pipes, and fittings	2	19	25
Wire, bars, and rods	6	25	25
Other and unclassified	26	43	27
Nitrates, phosphates, and potash	11	.....	3
Fertilizers, unclassified .....	.....	.....	3
Petroleum and products .....	.....	6	.....
Asphalt .....	.....	6	.....

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EUROPE TO WEST COAST CANADA—Continued			
Miscellaneous	164	174	182
Bricks and tile .....	.....	2	2
Liquors and wines	3	3	4
All other and unclassified	161	169	176
Total	262	403	497
EUROPE TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous	1	.....	1
Chemicals and petroleum chemicals, miscellaneous	38	6	2
Grains	33	48	15
Corn	1	10	.....
Wheat	25	34	.....
Other and unclassified	7	4	15
Machinery and equipment	24	35	18
Automobiles, trucks, accessories and parts	10	11	2
Other and unclassified	14	24	16
Manufactures of iron and steel	64	55	52
Angles, shapes, and sections	11	3	1
Plates, sheets, and coils	21	26	6
Tubes, pipes and fittings .....	.....	3	31
Wire, bars, and rods	15	17	4
Other and unclassified	17	6	10
Nitrates, phosphates, and potash	267	225	291
Ammonium compounds	35	56	119
Fertilizers, unclassified	204	162	163
Potash	28	7	9
Ores and metals	9	1	8
Metals, miscellaneous	9	1	8
Other agricultural commodities	101	24	.....
Sugar	101	24	.....
Miscellaneous	128	100	122
Cement .....	.....	1	.....
Glass and glassware	1	2	1
Paper and paper products	4	1	5
All other and unclassified	123	96	116
Total	665	494	509
EUROPE TO WEST COAST SOUTH AMERICA:			
Canned and refrigerated foods	28	41	85
Canned foods	14	30	62
Milk	11	24	53
Other and unclassified	3	6	9
Refrigerated foods	14	11	23
Dairy products	3	7	18
Other and unclassified	11	4	5
Chemicals and petroleum chemicals	58	75	105
Caustic soda	4	6	18
Chemicals, unclassified	51	62	78
Petroleum chemicals, miscellaneous	3	7	9
Coal and coke	8	.....	1
Grains	83	28	34
Barley	1	14	4
Oats	16	2	3
Wheat	19	7	8
Rice	20	.....	.....
Other and unclassified	27	5	19

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EUROPE TO WEST COAST SOUTH AMERICA—Continued			
Lumber and products	1	4	3
Pulpwood .....	.....	1	.....
Other and unclassified	1	3	3
Machinery and equipment	109	183	216
Agricultural machinery and implements	20	29	29
Automobiles, trucks, accessories and parts	26	55	84
Construction machinery and equipment	35	54	59
Electrical machinery and apparatus	14	25	24
Other and unclassified	14	20	20
Manufactures of iron and steel	121	158	252
Angles, shapes, and sections	16	28	16
Plates, sheets, and coils	46	51	105
Tubes, pipes, and fittings	13	24	18
Wire, bars, and rods	14	24	68
Other and unclassified	32	31	45
Minerals, miscellaneous	37	38	39
Soda and sodium compounds	36	36	37
Other and unclassified	1	2	2
Nitrates, phosphates, and potash	111	158	150
Ammonium compounds	24	36	63
Fertilizers, unclassified	47	87	72
Phosphates	20	18	9
Potash	19	17	1
Other and unclassified	1	.....	5
Ores and metals	16	36	88
Ores, miscellaneous	1	11	33
Metals	15	25	55
Iron	3	3	13
Tin, including tinplate	5	14	25
Other and unclassified	7	8	17
Other agricultural commodities	75	44	8
Sugar	69	34	7
Other and unclassified	6	10	1
Petroleum and products	131	81	58
Diesel oil	53	26	21
Gasoline	23	5	20
Liquefied gas	27	17	7
Residual fuel oil	20	6	4
Other and unclassified	8	27	6
Miscellaneous	414	462	589
Ammunition and explosives	2	1	4
Bricks and tile	6	17	11
Cement	2	6	61
Flour, wheat	29	15	4
Glass and glassware	6	20	18
Groceries, miscellaneous	9	3	4
Liquors and wines	7	12	20
Marble and stone .....	.....	1	2
Oil, vegetable .....	.....	2	2
Paper and paper products	39	55	44
Resin	8	8	8
Rubber, manufactured	5	4	5
Slag .....	.....	.....	41
Textiles	5	8	11
Wax, paraffin	4	5	6
All other and unclassified	292	305	348
Total	1,192	1,308	1,628

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EUROPE TO OCEANIA:			
Canned and refrigerated foods, miscellaneous	14	14	6
Chemicals and petroleum chemicals	111	117	119
Caustic soda	30	29	21
Chemicals, unclassified	67	79	93
Petroleum chemicals, miscellaneous	14	9	5
Lumber and products, miscellaneous	4	1	9
Machinery and equipment	31	36	24
Agricultural machinery and implements	1	3	2
Automobiles, trucks, accessories and parts	11	21	16
Construction machinery and equipment	12	8	3
Electrical machinery and apparatus	3	2	1
Other and unclassified	4	2	2
Manufactures of iron and steel	29	37	31
Angles, shapes, and sections	5	5	6
Plates, sheets, and coils	7	8	11
Tubes, pipes, and fittings	3	7	9
Wire, bars, and rods	6	10	4
Other and unclassified	8	7	1
Minerals, miscellaneous	7	6	5
Salt	6	5	4
Soda and sodium compounds	1	1	1
Nitrates, phosphates, and potash	51	17	25
Ammonium compounds	1	2	9
Fertilizers, unclassified	32	15	16
Phosphates	17	.....	.....
Potash	1	.....	.....
Ores and metals, miscellaneous .....	.....	1	1
Other agricultural commodities, miscellaneous	9	9	10
Petroleum and products	5	10	20
Lubricating oil	2	8	14
Other and unclassified	3	2	6
Miscellaneous	505	580	423
Bricks and tile	1	4	3
Cement	16	30	42
Clay, fire and china .....	.....	.....	2
Flour, wheat	9	9	7
Glass and glassware	2	1	2
Groceries, miscellaneous	2	7	1
Liquors and wines	9	3	4
Oil, vegetable	16	11	6
Paper and paper products	6	7	7
Rubber, manufactured	1	.....	1
Textiles	1	1	1
All other and unclassified	442	507	347
Total	766	828	673
EUROPE TO ASIA:			
Canned and refrigerated foods	13	14	12
Refrigerated foods, miscellaneous	13	14	12
Chemicals and petroleum chemicals	283	182	141
Caustic soda	13	8	.....
Chemicals, unclassified	234	151	110
Petroleum chemicals, miscellaneous	36	23	31
Coal and coke .....	.....	59	.....
Grains, miscellaneous .....	.....	.....	51
Lumber and products, miscellaneous .....	.....	19	49

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
EUROPE TO ASIA—Continued			
Machinery and equipment	9	13	10
Automobiles, trucks, accessories and parts	9	13	10
Manufactures of iron and steel, miscellaneous			2
Nitrates, phosphates, and potash			5
Ores and metals, miscellaneous		13	25
Petroleum and products, miscellaneous	53	15	35
Miscellaneous	104	31	48
Paper and paper products	17		
All other and unclassified	87	31	48
Total	462	346	378
AFRICA TO WEST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous		1	
Manufactures of iron and steel, miscellaneous	76	115	75
Ores and metals	22	91	62
Metals	11	6	2
Other and unclassified	11	6	2
Ores	11	85	60
Manganese ore	3	50	41
Lead ore	8	33	14
Other and unclassified		2	5
Petroleum and products	177	181	148
Crude oil	147	47	148
Gasoline	30	27	
Other and unclassified		107	
Miscellaneous	6	11	10
All other and unclassified	6	11	10
Total	281	399	295
AFRICA TO WEST COAST CANADA:			
Manufactures of iron and steel, miscellaneous	4	40	56
Miscellaneous	7	31	3
Phosphates		29	
All other and unclassified	7	2	3
Total	11	71	59
AFRICA TO WEST COAST CENTRAL AMERICA:			
Canned and refrigerated foods			4
Nitrates, phosphates, and potash	32	21	
Fertilizer, miscellaneous	12		
Phosphates	20	21	
Total	32	21	4
AFRICA TO WEST COAST SOUTH AMERICA:			
Manufactures of iron and steel, miscellaneous	6	27	1
Miscellaneous	5	13	7
All other and unclassified	5	13	7
Total	11	40	8

**Table 10.—Important Commodity Shipments Over Principal Trade Routes
Atlantic to Pacific—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	<i>1983</i>	<i>1982</i>	<i>1981</i>
AFRICA TO ASIA:			
Canned and refrigerated foods	61	59	51
Fish, refrigerated	59	52	51
Other and unclassified	2	7	.....
Nitrates, phosphates, and potash .....	.....	6	10
Phosphates .....	.....	6	10
Miscellaneous .....	.....	9	21
All other and unclassified .....	.....	9	21
Total	61	74	82
ASIA (MIDDLE EAST) TO WEST COAST UNITED STATES:			
Miscellaneous	61	13	22
Chemicals, miscellaneous	39	.....	10
All other and unclassified	22	13	12
Total	61	13	22
ASIA (MIDDLE EAST) TO WEST COAST SOUTH AMERICA:			
Miscellaneous	2	4	26
All other and unclassified	2	4	26
Total	2	4	26

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic**

(Thousands of long tons)

	Fiscal year		
	1983	1982	1981
WEST COAST UNITED STATES TO EAST COAST UNITED STATES:			
Canned and refrigerated foods, miscellaneous	8	1	2
Chemicals and petroleum chemicals	94	85	85
Chemicals, unclassified	78	78	57
Petroleum chemicals, miscellaneous	16	7	28
Lumber and products	34	5	.....
Minerals, miscellaneous	87	139	100
Soda and sodium compounds	87	139	100
Ores and metals, miscellaneous .....	.....	.....	21
Petroleum and products	6,663	32,369	24,791
Crude oil	5,923	31,249	22,424
Diesel oil	190	269	498
Fuel oil, residual	63	284	1,080
Gasoline	115	88	474
Lubricating oil	102	131	131
Other and unclassified	270	348	184
Miscellaneous	279	266	219
Glass and glassware .....	.....	.....	37
All other and unclassified	279	266	182
Total	7,165	32,865	25,218
WEST COAST UNITED STATES TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods	15	26	18
Canned foods, miscellaneous	5	14	5
Refrigerated foods	10	12	13
Fruit, excluding bananas	9	12	12
Other and unclassified	1	.....	1
Chemicals and petroleum chemicals, miscellaneous	3	3	3
Coke, coal type .....	.....	10	.....
Grains	21	42	2
Wheat	18	23	.....
Barley .....	.....	17	.....
Other and unclassified	3	2	2
Lumber and products	35	41	39
Pulpwood	30	34	36
Other and unclassified	5	7	3
Machinery and equipment, miscellaneous	5	5	7
Manufactures of iron and steel, miscellaneous	2	1	3
Minerals, miscellaneous	83	112	114
Borax	5	7	12
Salt	20	15	17
Sulfur .....	.....	.....	20
Soda and sodium compounds	58	85	57
Other and unclassified .....	.....	5	8
Nitrates, phosphates, and potash	7	.....	46
Fertilizers, unclassified	1	.....	23
Potash	6	.....	23
Ores and metals	1	2	4
Metals, miscellaneous	1	2	4
Other agricultural commodities	9	23	11
Beans, edible	2	9	3
Peas, dry	7	14	8
Petroleum and products	1	21	84
Petroleum coke .....	.....	21	83
Other and unclassified	1	.....	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST UNITED STATES TO EAST COAST SOUTH AMERICA—Continued			
Miscellaneous	46	52	104
Flour, wheat .....	.....	.....	36
Oil, vegetable .....	.....	5	12
Paper and paper products	4	4	6
All other and unclassified	42	43	50
Total	228	338	435
WEST COAST UNITED STATES TO CRISTOBAL, R.P.:			
Petroleum and products	29	34	10
Diesel oil	29	34	10
Miscellaneous	3	4	2
All other and unclassified	3	4	2
Total	32	38	12
WEST COAST UNITED STATES TO WEST INDIES:			
Canned and refrigerated foods, miscellaneous	5	9	1
Grains	77	84	80
Rice	77	84	80
Petroleum and products	1,316	3,575	4,108
Crude oil	287	3,255	3,200
Diesel oil	100	.....	37
Gasoline	28	.....	.....
Residual fuel oil	800	320	871
Other and unclassified	101	.....	.....
Miscellaneous	4	8	8
All other and unclassified	4	8	8
Total	1,402	3,676	4,197
WEST COAST UNITED STATES TO EUROPE:			
Canned and refrigerated foods	123	104	132
Canned foods, miscellaneous	3	.....	1
Refrigerated foods	120	104	131
Fish	5	19	15
Fruit, excluding bananas	40	20	57
Other and unclassified	75	65	59
Chemicals and petroleum chemicals, miscellaneous	95	72	28
Coal and coke	601	516	203
Grains	137	597	584
Barley .....	.....	126	142
Rice	5	110	.....
Wheat	132	358	438
Other and unclassified .....	.....	3	4
Lumber and products	636	553	575
Boards and planks	222	175	173
Plywood, veneers, composition board	134	76	122
Pulpwood	257	272	261
Other and unclassified	23	30	19
Machinery and equipment, miscellaneous .....	.....	2	5
Manufactures of iron and steel, miscellaneous .....	.....	6	.....
Minerals, miscellaneous	408	418	519
Borax	385	386	515
Salt .....	.....	26	.....
Sulfur	23	6	.....
Other and unclassified .....	.....	.....	4

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1983	1982	1981
WEST COAST UNITED STATES TO EUROPE—Continued			
Nitrates, phosphates, and potash	1	35	61
Ammonium compounds .....	.....	4	41
Fertilizers, unclassified .....	.....	28	14
Fishmeal	1	3	6
Ores and metals	112	56	49
Ores	68	49	42
Copper	50	38	14
Lead	4	3	5
Other and unclassified	14	8	23
Metals	44	7	7
Copper	41	1	3
Lead	1	6	4
Tin, including tinplate	2	.....	.....
Other agricultural commodities	44	39	22
Beans, edible .....	.....	1	.....
Cotton, raw	40	9	15
Molasses .....	.....	24	.....
Oilseeds	4	5	7
Petroleum and products	1,884	1,841	1,360
Petroleum coke	1,512	1,198	1,089
Residual fuel oil	195	460	207
Other and unclassified	177	183	64
Miscellaneous	700	806	873
Carbon black .....	.....	79	20
Clay, fire and china	21	5	8
Flour, wheat .....	.....	.....	18
Groceries, miscellaneous	1	7	5
Oil, vegetable	7	6	11
Paper and paper products	56	51	62
Seeds, excluding oilseeds .....	.....	3	7
Slag .....	.....	5	.....
All other and unclassified	615	650	742
Total	<u>4,741</u>	<u>5,045</u>	<u>4,411</u>
WEST COAST UNITED STATES TO AFRICA:			
Chemicals and petroleum chemicals, miscellaneous	1	1	1
Coke, coal type	53	.....	9
Grains	506	1,673	1,967
Wheat	485	1,673	1,967
Other and unclassified	21	.....	.....
Lumber and products, miscellaneous	2	34	106
Machinery and equipment, miscellaneous .....	.....	2	2
Minerals, miscellaneous	139	72	32
Sulfur	139	60	16
Other and unclassified .....	.....	12	16
Petroleum and products, miscellaneous .....	.....	28	9
Miscellaneous	24	70	19
Flour, wheat	20	29	3
Oil, vegetable .....	.....	18	1
All other and unclassified	4	23	15
Total	<u>725</u>	<u>1,880</u>	<u>2,145</u>

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST UNITED STATES TO ASIA (MIDDLE EAST):			
Coal .....	.....	.....	57
Grains	1	10	93
Barley .....	.....	.....	46
Rice .....	.....	10	.....
Wheat	1	.....	47
Lumber and products, miscellaneous .....	.....	2	.....
Minerals, miscellaneous .....	.....	27	.....
Borax .....	.....	27	.....
Miscellaneous	30	46	24
All other and unclassified	30	46	24
Total	31	85	174
WEST COAST CANADA TO EAST COAST UNITED STATES:			
Chemicals and petroleum chemicals, miscellaneous	154	149	116
Lumber and products	1,080	686	902
Boards and planks	1,000	648	885
Other and unclassified	80	38	17
Minerals, miscellaneous	11	.....	.....
Sulfur	11	.....	.....
Nitrates, phosphates, potash	133	77	.....
Ammonium compounds	14	.....	.....
Fertilizers, miscellaneous	29	.....	.....
Potash	90	77	.....
Ores and metals	11	7	.....
Other and unclassified	11	7	.....
Petroleum and products	213	.....	.....
Crude oil	108	.....	.....
Others and unclassified	105	.....	.....
Miscellaneous	29	13	.....
All other and unclassified	29	13	.....
Total	1,631	932	1,018
WEST COAST CANADA TO EAST COAST CANADA:			
Coal .....	.....	.....	117
Petroleum and products	29	.....	77
Crude oil .....	.....	.....	50
Other and unclassified	29	.....	27
Miscellaneous .....	.....	25	.....
All other and unclassified .....	.....	25	.....
Total	29	25	194
WEST COAST CANADA TO EAST COAST SOUTH AMERICA:			
Coal	30	80	292
Grains	21	21	.....
Barley	21	21	.....
Lumber and products	32	27	14
Pulpwood	29	27	14
Other and unclassified	3	.....	.....
Minerals, miscellaneous	120	327	301
Sulfur	120	326	298
Other and unclassified .....	.....	1	3
Nitrates, phosphates, and potash	20	115	100
Fertilizers, unclassified	1	1	.....
Potash	19	111	99
Other and unclassified .....	.....	3	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST CANADA TO EAST COAST SOUTH AMERICA—			
Continued			
Ores and metals, miscellaneous .....	.....	14	6
Miscellaneous	35	20	31
Paper and paper products	22	10	22
All other and unclassified	13	10	9
Total	258	604	744
WEST COAST CANADA TO WEST INDIES:			
Grains .....	.....	14	.....
Barley .....	.....	14	.....
Chemicals and petroleum chemicals, miscellaneous	36	.....	.....
Lumber and products	29	29	69
Boards and planks	29	29	51
Other and unclassified .....	.....	.....	18
Nitrates, phosphates, and potash	17	.....	.....
Minerals, miscellaneous	69	165	104
Sulfur	69	165	104
Petroleum and products	52	.....	.....
Other and unclassified	52	.....	.....
Miscellaneous	2	9	19
Paper and paper products	2	6	19
All other and unclassified .....	.....	3	.....
Total	205	217	192
WEST COAST CANADA TO EUROPE:			
Canned and refrigerated foods, miscellaneous	31	39	64
Chemicals and petroleum chemicals, miscellaneous	173	62	7
Coal and coke	766	520	861
Grains	665	1,431	1,494
Barley	272	557	975
Wheat	361	751	397
Other and unclassified	32	123	122
Lumber and products	2,037	2,292	2,566
Boards and planks	886	1,092	1,287
Plywood, veneers, composition board	175	165	214
Pulpwood	875	993	1,039
Other and unclassified	101	41	26
Machinery and equipment	3	1	.....
Machinery and equipment, miscellaneous	3	1	.....
Minerals, miscellaneous	677	794	793
Asbestos	2	3	3
Sulfur	675	791	790
Nitrates, phosphates, and potash	18	25	28
Fertilizers, unclassified .....	.....	22	.....
Potash	14	.....	16
Fishmeal	4	3	7
Other and unclassified .....	.....	.....	5
Ores and metals	87	126	128
Ores	30	72	87
Copper	12	51	76
Zinc	6	7	9
Other and unclassified	12	14	2
Metals	57	54	41
Aluminum .....	.....	2	4
Copper	1	6	9

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST CANADA TO EUROPE—Continued			
Ores and metals—Continued			
Lead	37	18	13
Zinc	15	28	12
Other and unclassified	4	.....	3
Other agricultural commodities	57	30	94
Oilseeds	51	26	94
Other and unclassified	6	4	.....
Petroleum and products	86	115	27
Petroleum coke	84	115	27
Other and unclassified	2	.....	.....
Miscellaneous	610	708	692
Paper and paper products	357	428	441
All other and unclassified	253	280	251
Total	<u>5,210</u>	<u>6,143</u>	<u>6,754</u>
WEST COAST CANADA TO AFRICA:			
Chemicals and petroleum chemicals, miscellaneous	26	.....	.....
Coal and coke	50	.....	.....
Grains	53	103	165
Wheat	53	103	165
Lumber and products	312	153	233
Boards and planks	265	94	196
Pulpwood	18	41	37
Other and unclassified	29	18	.....
Minerals, miscellaneous	786	1,045	1,010
Sulfur	786	1,045	1,010
Nitrates, phosphates, and potash	7	.....	.....
Potash	7	.....	.....
Miscellaneous	2	7	17
All other and unclassified	2	7	17
Total	<u>1,236</u>	<u>1,308</u>	<u>1,425</u>
WEST COAST CANADA TO ASIA (MIDDLE EAST):			
Grains .....	.....	26	.....
Barley .....	.....	26	.....
Lumber and products	2	4	.....
Other and unclassified	2	4	.....
Minerals, miscellaneous	123	153	92
Sulfur	123	153	92
Miscellaneous .....	.....	3	.....
Other and unclassified .....	.....	3	.....
Total	<u>125</u>	<u>186</u>	<u>92</u>
WEST COAST CENTRAL AMERICA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	162	98	188
Refrigerated foods	161	98	188
Bananas .....	.....	98	179
Other and unclassified	1	.....	9
Minerals, miscellaneous	150	272	152
Salt	150	272	152
Nitrates, phosphates, and potash	9	5	11
Fishmeal	9	5	11

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST CENTRAL AMERICA TO EAST COAST UNITED STATES—Continued			
Ores and metals, miscellaneous	23	18	.....
Other agricultural commodities	<u>548</u>	<u>328</u>	<u>540</u>
Coffee	43	31	40
Molasses	189	69	200
Sugar	316	222	300
Other and unclassified .....	.....	6	.....
Petroleum and products	<u>5</u>	<u>26</u>	<u>75</u>
Crude oil .....	.....	.....	65
Other and unclassified	5	26	10
Miscellaneous	<u>12</u>	<u>21</u>	<u>9</u>
Oil, vegetable	7	9	7
All other and unclassified	<u>5</u>	<u>12</u>	<u>2</u>
Total	<u>909</u>	<u>768</u>	<u>975</u>
WEST COAST CENTRAL AMERICA TO EAST COAST CENTRAL AMERICA:			
Grains, miscellaneous	21	22	82
Nitrates, phosphates, and potash	<u>143</u>	<u>69</u>	<u>22</u>
Phosphates	143	69	22
Petroleum and products .....	.....	<u>52</u>	<u>29</u>
Crude oil .....	.....	27	.....
Gasoline .....	.....	.....	29
Other and unclassified .....	.....	25	.....
Miscellaneous	<u>2</u>	<u>8</u>	<u>2</u>
All other and unclassified	<u>2</u>	<u>8</u>	<u>2</u>
Total	<u>166</u>	<u>151</u>	<u>135</u>
WEST COAST CENTRAL AMERICA TO EAST COAST SOUTH AMERICA:			
Coke, coal type .....	.....	22	.....
Lumber and products, miscellaneous .....	.....	15	8
Ores and metals, miscellaneous	24	34	25
Other agricultural commodities, miscellaneous	2	3	1
Miscellaneous	<u>9</u>	<u>9</u>	<u>6</u>
All other and unclassified	<u>9</u>	<u>9</u>	<u>6</u>
Total	<u>35</u>	<u>83</u>	<u>40</u>
WEST COAST CENTRAL AMERICA TO WEST INDIES:			
Canned and refrigerated foods	<u>63</u>	<u>79</u>	<u>71</u>
Refrigerated foods, miscellaneous	63	79	71
Lumber and products	<u>41</u>	<u>33</u>	<u>25</u>
Boards and planks	41	31	23
Other and unclassified .....	.....	2	2
Other agricultural commodities	<u>43</u>	<u>4</u>	<u>9</u>
Molasses	29	.....	.....
Other and unclassified	14	4	9
Petroleum and products, miscellaneous .....	.....	13	28
Miscellaneous	<u>21</u>	<u>12</u>	<u>9</u>
All other and unclassified	<u>21</u>	<u>12</u>	<u>9</u>
Total	<u>168</u>	<u>141</u>	<u>142</u>

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST CENTRAL AMERICA TO EUROPE:			
Canned and refrigerated foods	120	126	190
Refrigerated foods	120	126	190
Bananas	101	93	152
Other and unclassified	19	33	38
Chemicals and petroleum chemicals, miscellaneous	20	.....	.....
Grains, miscellaneous .....	.....	1	7
Lumber and products	16	15	11
Boards and planks	15	14	6
Other and unclassified	1	1	5
Manufactures of iron and steel, miscellaneous	15	35	.....
Nitrates, phosphates, and potash	1	11	48
Fertilizers, unclassified .....	.....	9	24
Fishmeal	1	2	5
Other and unclassified .....	.....	1	19
Ores and metals, miscellaneous	183	172	263
Ores	153	151	222
Chrome .....	.....	.....	24
Copper	125	151	198
Other and unclassified	28	.....	.....
Metals	30	21	41
Copper	25	21	40
Other and unclassified	5	.....	1
Other agricultural commodities	257	421	215
Beans, edible	4	.....	7
Coffee	77	76	83
Cotton, raw	45	47	41
Molasses	86	241	30
Oilseeds	6	24	13
Peas, dry	17	28	41
Sugar	22	5	.....
Miscellaneous	124	117	148
Seeds, excluding oilseeds .....	.....	1	11
Textiles	5	.....	.....
Tobacco and manufactures	1	1	.....
All other and unclassified	118	115	137
Total	736	898	882
WEST COAST CENTRAL AMERICA TO AFRICA:			
Canned and refrigerated foods	1	10	14
Bananas .....	.....	10	7
Other and unclassified	1	.....	7
Lumber and products, miscellaneous	2	7	16
Manufactures of iron and steel	64	8	.....
Other agricultural commodities	35	14	15
Coffee	19	1	.....
Peas, dried	6	.....	12
Sugar, raw .....	.....	.....	3
Other and unclassified	10	13	.....
Miscellaneous	2	11	1
All other and unclassified	2	11	1
Total	104	50	46

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1983	1982	1981
WEST COAST CENTRAL AMERICA TO ASIA (MIDDLE EAST):			
Canned and refrigerated foods	16	18	15
Bananas	16	18	15
Manufactures of iron and steel	27	.....	.....
Other agricultural commodities	13	.....	.....
Sugar	12	.....	.....
Other and unclassified	1	.....	.....
Miscellaneous .....	.....	.....	1
All other and unclassified .....	.....	.....	1
Total	56	18	16
WEST COAST SOUTH AMERICA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	504	513	446
Canned foods, miscellaneous	10	21	14
Refrigerated foods	494	492	432
Bananas	315	354	326
Fish	23	18	17
Fruit, excluding bananas	141	116	85
Refrigerated, miscellaneous	15	4	4
Chemicals and petroleum chemicals, miscellaneous	24	66	64
Lumber and products	19	23	30
Boards and planks	8	8	20
Other and unclassified	11	15	10
Manufactures of iron and steel, miscellaneous	3	5	4
Minerals, miscellaneous	382	198	140
Salt	377	197	119
Soda and sodium compounds	5	.....	21
Other and unclassified .....	.....	1	.....
Nitrates, phosphates, and potash	166	154	162
Fertilizer, miscellaneous .....	.....	.....	10
Fishmeal	42	44	9
Nitrate of soda	120	105	135
Potash	4	5	8
Ores and metals	742	1,015	1,130
Ores	319	727	852
Copper	10	12	13
Iron .....	.....	161	343
Lead	25	9	.....
Tin	1	2	1
Zinc	11	12	11
Other and unclassified	272	531	484
Metals	423	288	278
Copper	367	233	234
Iron .....	.....	.....	4
Lead	20	14	2
Zinc	33	29	24
Other and unclassified	3	12	14
Other agricultural commodities	596	441	569
Beans, edible	1	2	9
Cocoa and cacao beans	19	38	26
Coffee	124	128	149
Cotton, raw	3	7	4
Molasses	301	146	152
Sugar	148	120	228
Other and unclassified .....	.....	.....	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST SOUTH AMERICA TO EAST COAST UNITED STATES—Continued			
Petroleum and products	5,076	4,055	2,678
Crude oil	3,724	2,981	1,554
Fuel oil, residual	1,224	943	950
Gasoline	20	15	.....
Other and unclassified	108	116	174
Miscellaneous	126	131	108
Fibers, plant	6	8	6
Groceries, miscellaneous	4	7	7
Oil, fish .....	.....	18	.....
Textiles	10	9	10
All other and unclassified	106	89	85
Total	7,638	6,601	5,331
WEST COAST SOUTH AMERICA TO EAST COAST CANADA:			
Nitrates, phosphates, and potash	10	1	2
Nitrate of soda	10	1	2
Ores and metals, miscellaneous	52	61	62
Other agricultural commodities	40	.....	.....
Sugar	39	.....	.....
Other and unclassified	1	.....	.....
Minerals, miscellaneous	30	75	.....
Salt	30	75	.....
Petroleum and products	55	.....	.....
Crude oil	55	.....	.....
Miscellaneous	1	14	6
All other and unclassified	1	14	6
Total	188	151	70
WEST COAST SOUTH AMERICA TO EAST COAST CENTRAL AMERICA:			
Lumber and products .....	.....	.....	7
Pulpwood .....	.....	.....	6
Other and unclassified .....	.....	.....	1
Manufactures of iron and steel, miscellaneous	21	.....	.....
Nitrates, phosphates, and potash .....	.....	11	27
Fishmeal .....	.....	.....	11
Nitrate of soda .....	.....	11	14
Other and unclassified .....	.....	.....	2
Ores and metals	24	38	91
Metals, miscellaneous	11	22	25
Ores, miscellaneous	13	16	66
Other agricultural commodities	12	.....	.....
Sugar	12	.....	.....
Petroleum and products	821	228	76
Crude oil	821	228	75
Other and unclassified .....	.....	.....	1
Miscellaneous	12	18	21
Paper and paper products	2	2	5
All other and unclassified	10	16	16
Total	890	295	222

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1983	1982	1981
WEST COAST SOUTH AMERICA TO EAST COAST			
SOUTH AMERICA:			
Canned and refrigerated foods	5	9	8
Canned foods, miscellaneous .....	.....	.....	5
Fruit refrigerated, excluding bananas	3	5	2
Other and unclassified	2	4	1
Lumber and products, miscellaneous	44	109	113
Manufactures of iron and steel, miscellaneous	1	.....	2
Nitrates, phosphates, and potash .....	.....	1	5
Ores and metals, miscellaneous	54	84	128
Other agricultural commodities	27	122	41
Beans, edible	26	34	36
Sugar .....	.....	87	.....
Other and unclassified	1	1	5
Petroleum and products	1,537	1,202	1,406
Crude oil	1,528	1,074	1,261
Other and unclassified	9	128	145
Miscellaneous	34	100	104
Oil, fish .....	.....	.....	2
Oil, vegetable	3	27	18
Paper and paper products	9	13	16
All other and unclassified	22	60	68
Total	<u>1,702</u>	<u>1,627</u>	<u>1,807</u>
WEST COAST SOUTH AMERICA TO WEST INDIES:			
Canned and refrigerated foods	56	44	73
Canned foods, miscellaneous .....	.....	.....	2
Fish, refrigerated	55	44	71
Other and unclassified	1	.....	.....
Grains, miscellaneous	12	13	5
Lumber and products	27	21	12
Boards and planks	27	17	10
Other and unclassified .....	.....	4	2
Nitrates, phosphates, and potash	12	24	39
Fishmeal	12	24	39
Ores and metals .....	.....	13	35
Ores, miscellaneous .....	.....	11	35
Metals, miscellaneous .....	.....	2	.....
Other agricultural commodities	18	15	23
Beans, edible .....	.....	.....	3
Molasses .....	.....	13	20
Sugar	16	.....	.....
Other and unclassified	2	2	.....
Petroleum and products	2,059	1,062	2,680
Crude oil	1,650	948	2,367
Fuel oil, residual	343	82	258
Other and unclassified	66	32	55
Miscellaneous	27	2	12
All other and unclassified	27	2	12
Total	<u>2,211</u>	<u>1,194</u>	<u>2,879</u>
WEST COAST SOUTH AMERICA TO EUROPE:			
Canned and refrigerated foods	723	1,009	1,002
Canned foods, miscellaneous	25	27	31
Refrigerated foods	698	982	971

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST SOUTH AMERICA TO EUROPE—Continued			
Canned and refrigerated foods—Continued			
Bananas	278	342	382
Fish, refrigerated	293	474	431
Fruit, excluding bananas	116	141	153
Other and unclassified	11	25	5
Chemicals and petroleum chemicals, miscellaneous	9	7	19
Coke, coal type	3	21	.....
Grains, miscellaneous	37	52	49
Lumber and products	172	137	119
Boards and planks	7	7	34
Pulpwood	153	97	46
Other and unclassified	12	33	39
Nitrates, phosphates, and potash	895	964	660
Fertilizers, unclassified	11	17	8
Fishmeal	737	861	542
Nitrate of soda	147	82	108
Potash .....	.....	4	2
Ores and metals	1,564	1,890	1,412
Ores	730	1,043	694
Copper	103	206	93
Iron	53	101	69
Lead	64	105	50
Tin	30	36	40
Zinc	448	525	376
Other and unclassified	32	70	66
Metals	834	847	718
Copper	667	585	603
Lead	41	41	19
Zinc	54	135	68
Other and unclassified	72	86	28
Other agricultural commodities	357	320	341
Cocoa and cacao beans	9	14	18
Coffee	189	204	212
Cotton, raw	30	27	28
Oilseeds	1	3	1
Peas, dry .....	.....	.....	26
Sugar	107	59	36
Wool, raw	16	9	11
Other and unclassified	5	4	9
Petroleum and products	3	.....	54
Fuel oil, residual .....	.....	.....	54
Other and unclassified	3	.....	.....
Miscellaneous	253	292	195
Groceries, miscellaneous	6	15	15
Oil, fish	54	125	27
Paper and products	5	8	20
Seeds, excluding oilseeds .....	.....	1	1
Textiles	9	6	7
All other and unclassified	179	137	125
Total	4,016	4,692	3,851
WEST COAST SOUTH AMERICA TO AFRICA:			
Canned and refrigerated foods	34	60	50
Canned foods, miscellaneous .....	.....	.....	4
Bananas .....	.....	7	.....
Fish, refrigerated	34	53	46

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
WEST COAST SOUTH AMERICA TO AFRICA—Continued			
Lumber and products, miscellaneous	33	54	54
Minerals, miscellaneous.....	.....	21	.....
Sulfur .....	.....	21	.....
Nitrates, phosphates, and potash	7	21	1
Fishmeal.....	7	21	1
Ores and Metals .....	.....	7	.....
Ores .....	.....	2	.....
Zinc.....	.....	2	.....
Metals.....	.....	5	.....
Zinc.....	.....	5	.....
Other agricultural commodities	12	3	.....
Miscellaneous .....	.....	2	1
All other and unclassified .....	.....	2	1
Total	86	168	106
WEST COAST SOUTH AMERICA TO ASIA (MIDDLE EAST):			
Canned and refrigerated foods	14	72	63
Refrigerated foods	14	72	63
Bananas	11	48	61
Other and unclassified	3	24	2
Lumber and products, miscellaneous .....	.....	.....	7
Nitrates, phosphates, and potash .....	.....	22	40
Fishmeal.....	.....	22	40
Ores and metals, miscellaneous .....	.....	.....	13
Miscellaneous	1	.....	.....
All other and unclassified	1	.....	.....
Total	15	94	123
HAWAII TO EAST COAST UNITED STATES:			
Other agricultural commodities	196	50	177
Sugar	196	50	177
Miscellaneous	19	7	40
All other and unclassified	19	7	40
Total	215	57	217
HAWAII TO EUROPE:			
Other agricultural commodities	47	41	25
Molasses.....	47	41	25
Miscellaneous .....	.....	58	27
All other and unclassified .....	.....	58	27
Total	47	99	52
OCEANIA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	378	405	408
Refrigerated foods	378	405	408
Dairy products	1	5	7
Fruit, refrigerated	61	77	91
Meat	12	1	8
Other and unclassified	303	322	302
Chemicals and petroleum chemicals, miscellaneous	9	31	1
Manufactures of iron and steel, miscellaneous	62	40	25

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
OCEANIA TO EAST COAST UNITED STATES—Continued			
Ores and metals	418	497	796
Ores	376	481	747
Alumina/bauxite	31	66	272
Lead .....	.....	4	.....
Manganese	47	55	95
Other and unclassified	298	356	380
Metals	42	16	49
Aluminum metal	25	.....	.....
Lead metal	11	6	12
Zinc	1	1	1
Other and unclassified	5	15	36
Other agricultural commodities	311	634	669
Molasses	101	233	101
Sugar	210	398	560
Wool, raw .....	.....	3	3
Other and unclassified .....	.....	.....	6
Petroleum and products	100	191	121
Crude oil .....	.....	36	61
Fuel oil, residual	100	115	60
Liquefied natural gas .....	.....	9	.....
Petroleum coke .....	.....	31	.....
Miscellaneous	372	352	338
All other and unclassified	372	352	338
Total	1,650	2,150	2,358
OCEANIA TO EAST COAST CANADA:			
Canned and refrigerated foods	55	37	37
Refrigerated foods	55	37	37
Meat	1	.....	3
Other and unclassified	55	37	34
Ores and metals	25	12	75
Ores, miscellaneous	25	12	75
Other agricultural commodities	216	303	213
Molasses .....	.....	.....	20
Sugar	216	303	193
Miscellaneous	54	49	42
All other and unclassified	54	49	42
Total	350	401	367
OCEANIA TO EAST COAST CENTRAL AMERICA:			
Canned and refrigerated foods, miscellaneous	12	20	2
Ores and metals	86	46	60
Manganese ore	39	.....	.....
Ores, miscellaneous	47	46	60
Miscellaneous	6	14	23
All other and unclassified	6	14	23
Total	104	80	85
OCEANIA TO EAST COAST SOUTH AMERICA:			
Canned and refrigerated foods, miscellaneous	14	16	3
Ores and metals .....	.....	24	28
Metals, miscellaneous .....	.....	24	28
Miscellaneous	8	17	17
All other and unclassified	8	17	17
Total	22	57	48

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	<i>1983</i>	<i>1982</i>	<i>1981</i>
OCEANIA TO WEST INDIES:			
Canned and refrigerated foods	74	32	63
Canned foods, miscellaneous	4	7	4
Refrigerated foods	70	25	59
Dairy products	5	1	2
Fish, refrigerated	50	9	40
Meat	8	14	5
Other and unclassified	7	1	12
Miscellaneous	11	32	22
All other and unclassified	11	32	22
Total	85	64	85
OCEANIA TO EUROPE:			
Canned and refrigerated foods	185	298	225
Canned foods, miscellaneous .....	.....	.....	1
Refrigerated foods	185	298	224
Dairy products	6	15	22
Fruit, excluding bananas	53	75	77
Meat .....	.....	59	19
Other and unclassified	126	149	106
Ores and metals	155	277	273
Ores	79	217	171
Alumina/bauxite .....	.....	.....	39
Copper	71	201	126
Other and unclassified	8	16	6
Metals	76	60	102
Copper	35	26	.....
Zinc	15	.....	.....
Other and unclassified	26	34	102
Other agricultural commodities	251	232	279
Cocoa and cacao beans .....	.....	.....	2
Coffee .....	.....	.....	3
Copra	11	9	43
Molasses	69	90	.....
Skins and hides	1	1	2
Sugar	166	123	200
Wool, raw	4	9	29
Miscellaneous	296	335	136
Groceries, miscellaneous	1	.....	1
Oil, coconut	5	44	7
Oil, vegetable	24	23	2
Tallow	5	5	1
All other and unclassified	261	263	125
Total	887	1,142	913
ASIA TO EAST COAST UNITED STATES:			
Canned and refrigerated foods	205	149	180
Canned foods	64	79	86
Fruit	45	61	75
Vegetables	6	9	5
Other and unclassified	13	9	6
Refrigerated foods	141	70	94
Fruit, refrigerated	78	15	45
Other and unclassified	63	55	49

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
ASIA TO EAST COAST UNITED STATES—Continued			
Chemicals and petroleum chemicals, miscellaneous	108	118	200
Coal and coke . . . . .	.....	45	118
Lumber and products	641	414	598
Boards and planks	37	13	64
Plywood, veneers, composition board	585	357	499
Other and unclassified	19	44	35
Machinery and equipment	1,210	1,258	1,282
Agricultural machinery	11	10	5
Automobiles, trucks, accessories, and parts	1,131	1,164	1,214
Construction machinery and equipment	19	34	29
Electrical machinery and apparatus	13	21	18
Other and unclassified	36	29	16
Manufactures of iron and steel	2,905	4,311	4,182
Angles, shapes, and sections	348	459	618
Nails, tacks, and spikes	59	84	53
Plates, sheets, and coils	1,035	896	806
Tubes, pipes, and fittings	564	1,438	1,557
Wire, bars, and rods	174	220	189
Other and unclassified	725	1,214	959
Nitrates, phosphates, and potash	2	2	2
Fertilizers, unclassified	2	2	2
Ores and metals	901	1,124	1,007
Ores	835	1,059	959
Alumina/bauxite	43	102	155
Chrome	11	38	86
Manganese	1	11	5
Other and unclassified	780	908	713
Metals	66	65	48
Aluminum	29	32	19
Copper	7	5	13
Iron	1	20	.....
Zinc . . . . .	.....	1	2
Other and unclassified	29	7	14
Other agricultural commodities	323	411	427
Coffee	8	1	10
Copra	1	1	1
Rubber, raw	56	35	65
Sugar	251	373	357
Other and unclassified	7	1	4
Petroleum and products, miscellaneous	141	375	210
Miscellaneous	3,611	3,283	3,192
Bricks and tile	1	2	2
Clay, fire and china	2	.....	1
Fibers, plant	1	2	9
Glass and glassware	4	7	4
Groceries, miscellaneous	7	9	28
Oil, coconut	63	56	181
Oil, vegetable	32	93	114
Porcelainware	2	1	5
Rubber, manufactured	41	18	26
Textiles	6	9	12
All other and unclassified	3,452	3,086	2,810
Total	10,047	11,490	11,398

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	1983	1982	1981
ASIA TO EAST COAST CANADA:			
Canned and refrigerated foods, miscellaneous	1	1	3
Machinery and equipment	6	2	5
Automobiles, trucks, accessories, and parts			1
Other and unclassified	6	2	4
Manufactures of iron and steel	30	18	29
Plates, sheets, and coils	10	6	21
Tubes, pipes, and fittings	9	9	5
Wire, bars, and rods	2	3	
Other and unclassified	9		3
Ores and metals, miscellaneous		1	
Miscellaneous	284	262	261
All other and unclassified	284	262	261
Total	321	284	298
ASIA TO EAST COAST CENTRAL AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	70	276	107
Machinery and equipment, miscellaneous		4	7
Manufactures of iron and steel, miscellaneous	14	71	133
Minerals, miscellaneous			19
Ores and metals, miscellaneous	58	43	21
Ores, miscellaneous	58	43	21
Miscellaneous	27	24	15
All other and unclassified	27	24	15
Total	169	418	302
ASIA TO EAST COAST SOUTH AMERICA:			
Chemicals and petroleum chemicals, miscellaneous	4	4	5
Machinery and equipment	72	70	101
Automobiles, trucks, accessories, and parts	19	29	27
Construction machinery and equipment	32	6	1
Electrical machinery and apparatus	11	13	17
Other and unclassified	10	22	46
Manufactures of iron and steel	230	522	412
Plates, sheets, and coils	91	141	219
Tubes, pipes, and fittings	86	293	105
Other and unclassified	53	88	88
Nitrates, phosphates, and potash	4		3
Fertilizers, unclassified	4		3
Ores and metals	32	47	43
Ores	22	8	24
Chrome		8	2
Other and unclassified	22		22
Metals	10	39	19
Tin, including tinplate	3	4	15
Other and unclassified	7	35	4
Other agricultural commodities	4	4	3
Rubber, raw	4	4	3
Petroleum and products	2	2	18
Gasoline			18
Other and unclassified	2	2	
Miscellaneous	186	341	280
Glass and glassware	1	1	2
Resin	1	3	4
Rubber, manufactured	6	10	12
Textiles	2	6	8
All other and unclassified	176	321	254
Total	534	990	865

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	Fiscal year		
	1983	1982	1981
ASIA TO CRISTOBAL, R.P.:			
Machinery and equipment	4	7	6
Electrical machinery and apparatus.....	1	1	2
Other and unclassified	3	6	4
Manufactures of iron and steel, miscellaneous	20	21	16
Miscellaneous	81	103	130
Textiles.....	2	1	3
All other and unclassified	79	102	127
Total.....	105	131	152
ASIA TO WEST INDIES:			
Canned and refrigerated foods	43	43	31
Canned foods, miscellaneous	30	27	20
Fish, refrigerated	13	16	11
Chemicals and petroleum chemicals, miscellaneous	7	12	5
Coal	21	21	22
Grains.....	116	113	75
Corn .....	.....	2	1
Rice.....	106	111	74
Soybeans	10	.....	.....
Lumber and products	133	143	112
Boards and planks	96	97	70
Plywood veneers.....	19	23	23
Pulpwood.....	12	8	12
Other and unclassified	6	15	7
Machinery and equipment	158	151	164
Automobiles, trucks, accessories, and parts.....	144	127	139
Electrical machinery and apparatus.....	3	4	6
Other and unclassified	11	20	19
Manufactures of iron and steel	152	126	119
Plates, sheets, and coils	70	52	47
Tubes, pipes, and fittings	30	36	23
Other and unclassified	52	38	49
Ores and metals	8	20	20
Metals, miscellaneous	4	13	14
Ores, miscellaneous	4	7	6
Petroleum and products .....	.....	5	36
Diesel oil .....	.....	4	6
Other and unclassified .....	.....	1	30
Miscellaneous	316	264	282
Bricks and tile	3	4	6
Glass and glassware	5	4	4
Groceries, miscellaneous	1	2	2
Paper and paper products.....	16	5	15
Porcelainware	1	1	1
Resin.....	1	1	2
Rubber, manufactured.....	1	3	4
Textiles.....	6	10	13
All other and unclassified	282	234	235
Total.....	954	898	866
ASIA TO EUROPE:			
Canned and refrigerated foods	15	6	6
Chemicals and petroleum chemicals, miscellaneous	3	12	11
Coke, coal type.....	32	46	.....
Machinery and equipment	3	10	1
Automobiles, trucks, accessories, and parts.....	3	10	1

**Table 11.—Important Commodity Shipments Over Principal Trade Routes
Pacific to Atlantic—Continued**

[Thousands of long tons]

	<i>Fiscal year</i>		
	<i>1983</i>	<i>1982</i>	<i>1981</i>
ASIA TO EUROPE—Continued			
Ores and metals, miscellaneous .....	.....	29	27
Other agricultural commodities	23	.....	.....
Sugar raw	23	.....	.....
Petroleum and products, miscellaneous .....	.....	58	.....
Miscellaneous	85	69	83
Oil, coconut	19	.....	4
Oil, fish	31	27	37
Oil, vegetable .....	.....	8	2
All other and unclassified	35	34	40
Total	161	230	128
ASIA TO AFRICA:			
Canned and refrigerated foods, miscellaneous	1	11	.....
Miscellaneous	13	2	4
Sugar raw	12	.....	.....
All other and unclassified	1	2	4
Total	14	13	4

Table 12.—Principal Canal Commodities by Direction—Fiscal Year 1983

[Long tons]

<i>Commodity</i>	<i>Atlantic to Pacific</i>	<i>Pacific to Atlantic</i>	<i>Total</i>
Ammonium compounds.....	378,887	25,674	404,561
Asbestos	19,941	3,114	23,055
Asphalt	90,382	5,707	96,089
Automobiles, trucks, and accessories	242,553	1,304,753	1,547,306
Bananas	1,121	888,099	889,220
Barley	117,815	299,107	416,922
Beans, edible	56,038	42,408	98,446
Benzene.....	13,035	3,468	16,503
Borax	12,186	391,426	403,612
Bricks and tile	21,339	4,827	26,166
Canned food products	74,454	170,697	245,151
Carbon black	4,096	666	4,762
Caustic soda.....	673,935	65,060	738,995
Cement	64,261	7,384	71,645
Chemicals, petroleum various	973,342	108,991	1,082,333
Chemicals, various	2,415,923	661,639	3,077,562
Clay, fire and china	380,467	27,670	408,137
Coal and coke (excluding petroleum coke) ..	9,160,558	1,556,411	10,716,969
Cocoa and cacao beans	2,755	30,870	33,625
Coffee	18,524	467,310	485,834
Coke, petroleum	712,110	1,624,366	2,336,476
Copra and coconuts	350	13,560	13,910
Corn	21,624,781	894	21,625,675
Cotton, raw	27,936	123,204	151,140
Fertilizers, various.....	1,589,947	55,941	1,645,888
Fibers, plant.....	20,847	16,543	37,390
Fishmeal	929	823,394	824,323
Flour, wheat.....	242,222	54,193	296,415
Gasoline	1,351,945	346,832	1,698,777
Glass and glassware	19,683	10,520	30,203
Grains, various	78,764	70,494	149,258
Groceries, various	28,537	36,835	65,372
Infusorial earth	1,782	4,636	6,418
Jet fuel	626,678	9,378	636,056
Kerosene	44,932	.....	44,932
Liquefied gas	799,116	27,673	826,789
Liquors	21,571	1,584	23,155
Lumber and products (excluding pulpwood)	53,780	3,923,333	3,977,113
Machinery, agricultural	58,601	16,273	74,874
Machinery, construction	104,055	64,759	168,814
Machinery, electrical.....	48,030	32,873	80,903
Machinery, various	71,626	56,440	128,066
Manufactures of iron and steel	1,632,455	3,563,363	5,195,818
Metal, aluminum.....	397,498	56,896	454,394
Metal, copper.....	41,621	1,161,788	1,203,409
Metal, iron	238,236	60,006	298,242
Metal, scrap	1,846,349	1,553	1,847,902
Metals, various (including tinplate)	116,922	359,472	476,394
Molasses	3,328	826,537	829,865
Nitrate of soda	26,666	277,295	303,961
Oats	27,008	546	27,554
Oil, coconut	3,981	91,300	95,281
Oil, crude	4,547,020	14,122,867	18,669,887
Oil, diesel	1,276,614	568,848	1,845,462
Oil, fish	8,310	87,226	95,536
Oil, lube	524,471	113,558	638,029
Oil, residual fuel	3,318,466	2,799,889	6,118,355
Oil, vegetable	245,253	107,643	352,896
Oilseeds	91,119	63,515	154,634
Ore, alumina/bauxite	375,336	107,265	482,601

Table 12.—Principal Canal Commodities by Direction—Fiscal Year 1983—
Continued

[Long tons]

<i>Commodity</i>	<i>Atlantic to Pacific</i>	<i>Pacific to Atlantic</i>	<i>Total</i>
Ore, copper	650	414,286	414,936
Ore, iron	69,215	53,549	122,764
Ores, various	305,286	2,362,125	2,667,411
Paper and paper products	701,793	514,433	1,216,226
Peas, dry	51,152	35,547	86,699
Petroleum and products, various	435,361	572,299	1,007,660
Phosphates	5,826,125	142,622	5,968,747
Potash	127,104	142,089	269,193
Pulpwood	474,778	1,411,371	1,886,149
Refrigerated food products (excluding bananas)	442,318	1,830,202	2,272,520
Resin	210,031	5,827	215,858
Rice	74,580	209,674	284,254
Rubber, manufactured	28,703	48,882	77,585
Rubber, raw	55	60,868	60,923
Salt	122,397	576,993	699,390
Seeds, excluding oilseeds	33,505	3,489	36,994
Slag, clinkers, and dross	15,257	.....	15,257
Soda and sodium compounds	60,753	149,578	210,331
Sorghum	1,345,153	.....	1,345,153
Soybeans	7,038,903	9,867	7,048,770
Sugar	1,700,541	1,803,803	3,504,344
Sulfur	11,070	1,944,642	1,955,712
Tallow	67,485	38,866	106,351
Textiles	47,584	41,327	88,911
Tobacco and manufactures	46,169	2,691	48,860
Toluene	44,958	6,392	51,350
Wax, paraffin	13,308	3,027	16,335
Wheat	4,478,345	1,084,214	5,562,559
Wool, raw	1,092	20,246	21,338
All other	7,084,351	6,524,768	13,609,119
Total	<u>87,828,509</u>	<u>57,762,250</u>	<u>145,590,759</u>

Other Statistics

Table 13.—Water Supply and Usage

	Fiscal year		Percent of usage fiscal year	
	1983	1982	1983	1982
	(Acre feet)			
MADDEN AND GATUN LAKE WATER SUPPLY:				
Total runoff, Madden Lake Basin	1,334,650	1,794,445		
Evaporation from Madden Lake	36,993	39,146		
Municipal water use Madden Lake	80,028	79,606		
Available for Madden Lake usage	1,217,629	1,675,693		
Total runoff, Gatun Lake (area below Madden) ...	1,637,906	2,680,854		
Subtotal	2,855,535	4,356,547		
Evaporation from Gatun Lake	444,508	411,825		
Available for Gatun watershed usage.....	<u>2,411,027</u>	<u>3,944,722</u>		
MADDEN LAKE WATER USAGE:				
Hydroelectric power	1,165,151	1,748,622	88	90
Leakage	14,479	14,479	1	1
Spillway discharge	62,351	90,060	5	5
Municipal	80,028	79,606	6	4
Total Madden Lake usage	<u>1,322,009</u>	<u>1,932,767</u>	<u>100</u>	<u>100</u>
GATUN LAKE WATER USAGE:				
Hydroelectric power	425,023	1,097,865	18	27
Lockages, Gatun and Pedro Miguel.....	1,858,609	2,333,126	78	57
Municipal and other usages	94,654	90,237	4	2
Spillway discharge .....	.....	587,282	...	14
Total Gatun Lake usage	<u>2,378,286</u>	<u>4,108,510</u>	<u>100</u>	<u>100</u>

Table 14.—Dredging Operations—Fiscal Year 1983

	(Cubic yards)		
	Earth	Rock	Total
Pacific District	548,452	.....	548,452
Central District	1,480,552	367,950	1,848,502
Atlantic District .....	.....	.....	.....
Grand Total	<u>2,029,004</u>	<u>367,950</u>	<u>2,396,954</u>

Table 15.—Electrical Power Generated(Gigawatt hours) ¹

	<i>Fiscal year</i>	
	<i>1983</i>	<i>1982</i>
Generation:		
Gatun hydro station	27	68
Madden hydro station	114	183
Thermal generating stations	<u>440</u>	<u>309</u>
Gross generated by Panama Canal Commission	581	560
Less station service usage	<u>(16)</u>	<u>(12)</u>
Net total generated by Panama Canal Commission	565	548
Power Purchases:		
Through interconnect from Panama .....	....	8
Net Energy charged for Wheeling	9	6
Power Sales:		
Through interconnect to Panama	(7)	(4)
Net power generated and purchases for Canal area only	567	558
Other power generated by military for own use .....	....	....
Total Canal area requirements	<u>567</u>	<u>558</u>
Power distributed to Commission's customers	523	513
Distribution losses	44	45
Peak load (thousands of kilowatts)	91	89
Date of peak load	Apr. 4	Mar. 26
Canal area load factor ²	71.4%	71.6%

¹ One gigawatt hour equal to 1 million kilowatt hours.² Total Canal area requirements divided by number of hours per year times peak load.**Table 16.—Fire Statistics**

	<i>Fiscal Year 1983</i>		<i>Fiscal Year 1982</i>	
	<i>Number of fires</i>	<i>Property loss</i>	<i>Number of fires</i>	<i>Property loss</i>
PCC	164	\$8,259	101	\$85,541
Armed Forces	474	43,710	367	25,700
Private (including ships)	82	189,768	80	3,087,869
R.P.*	265	9,195	189	4,500
Total	<u>985</u>	<u>\$250,932</u>	<u>737</u>	<u>\$3,203,610</u>
Value of Property involved in ship fires		\$46,626,259		\$22,023,051
Value of Property involved in other fires		100,950,457		147,372,940
Calls for emergency aid **		2,926		2,675
Total number of calls (all types) responded to		4,102		3,551

* Statistics started as of October 1, 1979 due to the Treaty implementation.

** Includes Fire Apparatus and Ambulance.



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